MOTHERS' EDUCATIONAL EXPECTATIONS PRIOR TO THE BIRTHS OF THEIR CHILDREN

by

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ABSTRACT

Parents' educational expectations for their children have been found to significantly correlate with academic achievement. The causes of these correlations, however, are somewhat unclear. Some research suggests that parents' expectations are the product of parents' personal background variables. Other research suggests that parents' expectations are formulated according to their children's previous academic performance. This study adds to the existing research by examining the educational expectations of 100 mothers prior to the births of their children; thus eliminating the potential confounder of students' previous academic performance.

Participants were surveyed regarding six background variables: ethnicity, age, income, personal educational attainment, marital status, and family size. Participants were also asked to report their educational expectations for their unborn children in terms of (a) the grades they expected of their children to receive in school, and (b) the highest level of education they expected their children to obtain.

Three major findings emerged. First, prior to their children's births, most mothers had similar educational expectations. Second, with prior student performance eliminated, only mother's educational attainment was significantly correlated with both types of educational expectations. And third, some combinations of variables significantly increased the ability to correctly predict expectations. These findings imply that parents' expectations can and do change and that they are influenced by multiple factors.

To my mother, who has always held the highest expectations for me. And to my wife, who has been my biggest help in achieving those expectations.

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CHAPTER 1

INTRODUCTION

In their review of parental involvement literature, Henderson and Berla (1994) concluded that parents' ability to express high (but not unrealistic) expectations for their child's achievement and future career is one of the greatest factors in that child's educational achievement. After a thorough examination of the literature on parental expectations, however, it appears that this statement takes much for granted. Even though a strong correlation has been shown between parental expectations and student achievement, there is still much about the relationship between these two factors that is unclear. Chiefly, do parents' expectations actually cause student behavior? What are the determinants of parents' expectations? And, how do students' prior achievements affect parents' future expectations?

Background to the Problem

In 2001, the *No Child Left Behind Act* identified six goals for improving the educational system of the United States. One of those goals was to increase parents' levels of involvement in their child's education. Why focus on parental involvement? Parental involvement is attractive to educators and policy-makers for a variety of reasons. Parental involvement is appealing to some because parents are viewed as a plentiful, somewhat malleable resource that is willing to work at no or little cost to the system.

Further, the education of children is seen as involving parents as well as schools. Finally, and perhaps most significantly, the research on parental involvement has demonstrated a clear link between enhanced parental involvement and increased student achievement. These findings have sparked the interest of nearly all groups involved in education.

Findings from three decades of parental involvement studies indicate that parents' active and deliberate involvement in their child's education at home and at school leads to increased academic performance and a greater likelihood of the child pursuing post-secondary education (Henderson & Berla, 1994). In their meta-analysis of parental involvement research, Fan and Chen (1999) found that parental involvement measures had a moderate, yet significant effect on students' academic achievement. Three meta-analyses conducted by Jeynes (2003, 2005, 2007) demonstrated similar and even slightly higher results than those of Fan and Chen. Furthermore, Jeynes' findings suggest that parents play a key and instrumental role in their children's education regardless of geographic, economic, and social backgrounds.

Parental involvement research, however, has not proceeded uninhibited. The lack of a unitary construct in terms of definition has continually plagued the trustworthiness of parental involvement research. What exactly is parental involvement? Operational definitions have included parental actions such as taking children on camping trips, reading newspapers, attending parent-teacher conferences, outings to zoos, visiting libraries and museums, volunteering in the classroom, having educational conversations at home, and monitoring children's T.V. time. Definitions have also included broader concepts such as parental styles, parental beliefs, and parental expectations. The frequent combining of dissimilar definitions into the construct of "parental involvement" has

masked the variation that exists among the different types of parental involvement and their assumed benefits. Fan and Chen (1999) noted this fact and cautioned that the relationship between parental involvement and students' academic achievement should not be generalized across different operational definitions. They also cautioned against generalizing across different areas of academic achievement.

One type of parental involvement, however, has consistently weathered the definitional storm, that of *parental expectations*. The construct of parental expectations is generally defined in one of two ways: (a) parents' ultimate educational aspirations for their children, such as a 4-year college degree; or (b) parents' expectations for their child's current academic performance, such as grades. For both definitions, parental expectations has consistently proven to be highly and positively correlated to student achievement (Henderson & Berla, 1994; Lippman, Guzman, Dombrowski-Keith, Schwalb, & Tice, 2008; Seginer, 1983).

McDonough (1997) found that students whose parents consistently and vocally communicated their college expectations from an early age were much more likely to attend college and more likely to enroll in a 4-year institution. Gill and Reynolds (1996) found that parents' expectations for their sixth graders had the highest correlations with the children's outcome for reading and for math. Phillips (1992) found parental expectations to be a strong predictor not only of students' reading and math capabilities, but it also predicted achievement in every other scholastic area.

In comparison to other parental involvement features, Jeynes (2005) reported that parents' expectations were better predictors of student success than any other parental involvement component. This was particularly true among high school students where

the correlation between parental expectations and academic achievement doubled that of any other parental involvement type. Contrary to other types of parental involvement, these findings remained constant regardless of measurement instrument, geographical location, and socioeconomic status.

The Problem of Correlation and Causation

As significant as these findings are, there is some disputation over what causes the unusually high correlation between parental expectations and academic achievement. At least three separate theories have been posited. First, some research suggests that parents transmit their expectations to their children, who in-turn adopt those expectations and strive to achieve them (Trusty & Pirtle, 1998). Second, other findings indicate that parents who hold high expectations for their children may exhibit more achievement-supportive behaviors, thus providing their children with a greater opportunity to succeed (Fan, 2001). Both of these theories propose a causative relation from parental expectations to student achievement. A third theory, however, suggests that the correlation between parental expectations and student achievement exists primarily due to parental expectations being based on students' past performance. In other words, parents' expectations are not the "cause" of student achievement but the "result" of students' past achievements. For example, a student receives an "A" grade and therefore, a parent expects an "A" grade in the future. In sum, this third theory explains that parents' expectations may not be the cause of students' academic achievement, but rather the result of students' past academic achievements (Goldenberg, Gallimore, Reese, & Garnier, 2001; Seginer, 1982, 1986).

To understand the relationship between parental expectations and student achievement, we must come to a greater understanding of what causes parents to have different expectations and how those expectations affect students' behavior. Clearly, feedback regarding the child's abilities is an important determinant of parental expectations. Are there other parental expectation determinants? Existing research suggests that some parental background features may also contribute to differences among parents' expectations. Features identified by research thus far include family income level, parents' education levels, parents' ethnic and cultural backgrounds, household composition, and prior student feedback (Lippman et al., 2008). A brief review of findings regarding these background features is presented here—a more thorough review is included in Chapter 2.

Family Income Level

Frequently, family income level is included as a part of the socioeconomic status equation. Even when examined as an individual topic, income level has also shown to correlate with different aspects of parental involvement—including parental expectations (Lee & Bowen, 2006). Almost without exception, the correlation has been in a positive direction; the higher the income--the more the parents expected their child to succeed academically and to obtain advanced degrees (Lippman et al., 2008). Lippman et al. found that parents' expectations for their children to attain a college degree increased incrementally with increased income. Similar results were found by Sanderfur, Meier, and Campbell (2006), who concluded that higher parental expectations among higher income parents may be due to the fact that higher income parents can invest more (time, money, etc.) in the education of their children than can low income parents.

Parents' Education Levels

Parents' level of education is another factor often included in an overall SES equation model. Again, when studied as part of a SES equation, parental education levels are positively associated with parents' expectations for their children's academic achievement (Jeynes, 2007; Sandefur et al., 2006; Trusty & Pirtle, 1998). When examined individually, the effects of parents' education level are similar to those of income level. For example, Herrold and O'Donnell (2008) found that 91% of parents who had earned graduate degrees expected their children to complete college or obtain a graduate degree. This number dropped to 50% for parents who had earned a high school diploma.

Parents' Ethnic and Cultural Backgrounds

Research findings demonstrate that parents' ethnic and cultural backgrounds contribute significantly to parents' educational involvement levels and choices (Caplan, Choy, & Whitmore, 1992; Okagaki & Sternberg, 1993). A number of studies suggest that cultural differences also play a role in forming parents' educational expectations and aspirations for their children (Goyette & Xie, 1999). Lippman et al. (2008) found parents' expectations for their children to finish college varied widely by ethnicity. Eighty percent of Asian students had parents who expected them to finish college, compared to 66% of White students, and 65% of Black and Hispanic students. Unexpectedly, Lippman et al. also found that 72% of students whose parents did not use English as their primary language at home expected them to finish college compared to 65% whose parents mainly spoke English.

Household Composition

Studies suggest that household composition, defined by parent configuration and number of siblings in the home, may also contribute to parents' educational expectations. For example, Lippman et al. (2008) found that 69% of students from two-parent families had parents who expected them to finish college, compared to 58% from single-parent families, and 52% from other types of family arrangements. Furthermore, the vast majority of research on family size and academic achievement has found them to be negatively correlated (Caplan et al., 1992). Caplan et al. suggest that the differences may be rooted in the limited time and energy parents must divide among multiple children. The authors noted that one vivid exception to this finding is the high marks obtained by the Indochinese immigrants from large families they studied.

To obtain the clearest information of how these determinants influence parental expectations, parental expectations should be studied completely separate from the powerful influence of prior child performance. Using existing findings and data to study these antecedents of parental expectations is difficult because the vast majority of parental expectation studies survey parents when their children are well into their school years and parents' expectations have been significantly influenced by feedback regarding their child's ability (Gill & Reynolds, 1996; Lippman et al., 2008). Even surveying parents of toddlers may not suffice. From very early in their child's life, parents begin formulating opinions about their child's abilities. Long before formal schooling, doctors, neighbors, family members, parenting handbooks, and various other sources provide anxious parents with benchmarks of development. The only way to control for prior performance is to examine parents' expectations before any child behaviors may be

observed or reported. In this study, therefore, to control for prior child performance and ensure the purest possible data, I will examine parental expectations prior to the birth of the child before parents have had an opportunity to receive feedback about their child's ability.

Purpose of the Study

The purpose of this study was to examine parents' educational expectations for their children. Previous research and theory have identified several antecedent factors that may influence the formation of parental expectations. In this study, I examined correlations between six of those antecedent factors and different levels of parental expectations. To ensure that parents' expectations are not influenced by the child's prior performance, participants were limited to pregnant women.

Overarching research questions included:

1. How do expectant mothers' academic expectations of their unborn children vary as a function of ethnicity, age, income, educational background, marital status, and number of children?
2. Which variable or combinations of variables have the most predictive power for parental expectations and to what degree can they predict parental expectations?
3. Do all parents have set educational expectations prior to receiving feedback regarding the child's abilities and performance?

Research Methodology

This study followed a nonexperimental, quantitative research design. This design is intended to describe existing phenomena without manipulation or treatment, while

exploring the degree to which two or more phenomena relate to one another (Drew, Hardman, & Hosp, 2008). The independent variables in this study consisted of six parental background factors: family income level, parents' education level, parents' culture, marital status, family size, and age. The dependent or measurement variable was "parental expectations" as measured by a written survey adapted from the Parent and Family Involvement (PFI) Survey: 2003. Responses were solicited from participants until the sample pool reached 100. To ensure a diverse population, participants were sought from geographic locations where high levels of diversity had been previously established.

Due to the categorical nature of the dependent variable and to provide comparison data to the PFI data, a frequency distribution was created to show measures of tendency. Due to the multivariate nature of this study and the many possible interrelationships between the independent variables, I will also perform a discriminant function analysis on the collective data points. These two analyses will combine to highlight how individual parental background factors as well as combinations of factors correlate to parental expectations.

Theoretical Framework

I approached the development of parents' expectations for their children as a function of social learning theory and parent role development. *Social Learning Theory* has grown out of data that describe the learning and development of individuals in the home and in society generally. This theory postulates that individuals learn and incorporate behaviors and attitudes through social interactions (Powell & Cassidy, 2007). Social learning, therefore, is a constant and ongoing form of education. Learning and memory theories suggest further that individuals will do the greatest amount of social

learning from those with whom they have the most frequent or most significant interactions (Driscoll, 2006). This theory places a great emphasis on the families and the cultures in which individuals reside and participate.

The results of social learning can be seen in both healthy and unhealthy behaviors. For example, witnessing violence between one's parents or caretakers is the strongest risk factor for transmitting violent behavior from one generation to the next (http://breakthecycle.com). In a positive example, parents who place a high value on education are more likely to have children who succeed academically and value education themselves (Caplan et al., 1992; Powell & Cassidy, 2007; Vaden-Kiernan & McManus, 2005).

Powell and Cassidy (2007) explain that social learning goes beyond the acquiring of understanding and knowledge to the realm of motivation and outcome expectancy. Individuals who observe or participate in healthy behavior (e.g., educational attainment) and their subsequent positive outcomes (e.g., increased earning power) learn to value the observed behavior and to expect similar positive outcomes. This exposure to healthy behaviors would then become a motivating factor in parents' aspirations and expectations for their children.

Mowder, Harvey, Moy, and Pedro (1995) approached parental involvement and expectations from a social learning framework using the *Parent Role Development Model* (PDRM) as a general guide. Researchers and theorists agree that the establishment of beliefs about effective parenting and child development is not a "one-time" occurrence, but that parents' beliefs about these subjects grow and change over the course of their lives (Green, Walker, Hoover-Depmsey, & Sandler, 2007). The Parent Role

Development Model (PRDM) created by Mowder (1993), suggests that from the time individuals are young, they gradually learn what it means to be a parent. These perceptions change, develop, and grow in complexity based on life and relationship experiences, such as educational experiences, cultural experiences, experience that comes with age, and experiences gained by raising multiple children.

As these theories explain, experience over time helps determine parents' beliefs about parenting and child development. In turn, these beliefs play a critical part in the construction of parental roles. Hoover-Dempsey et al. (2005) define role construction as parents' beliefs about what they should *do* in relation to their children's education. Although role construction is influenced by many factors, Hoover-Dempsey et al., explain that foremost among them are (a) parents' beliefs about how children develop, (b) beliefs about what parents should do to rear their children effectively, and (c) beliefs about what parents should do at home to help children succeed in school. Again, the PDRM postulates that these beliefs about child development, parenting, and schooling have developed over a lifetime of experiences and information seeking.

In conclusion, Social Learning Theory and the Parent Role Development Model assist in considering the impact of life experiences on parenting beliefs and aspirations for themselves and for their children. In this study, I will focus primarily on how experiences related to age, family size, culture, educational background, and income function as determinants of subsequent parental beliefs and educational experiences for their children.

Significance of the Study

This study is significant because it adds clarity to our understanding of what causes parents' to have different expectations. Specifically, this study helps answer questions regarding age, culture, income, education, and family size as determinants in parents' expectations. Perhaps most importantly, this study has significance in that it examines these determinants completely separate from feedback regarding the child's intellectual abilities. This is something that has not been done thus far in the field. These findings are important in that they represent the purest and earliest look at parental expectations and their relationship to these various factors. Specifically, the results of this study show how parents' differ in their expectations categorically. In other words, how do parents' background features relate to their educational expectations? These findings can lead to developmental and longitudinal studies that may help determine why such relationships exist and how parents' expectations can be channeled to the students' greatest benefit.

CHAPTER 2

LITERATURE REVIEW

From the time of Socrates, philosophers and educational thinkers have continually sought for better and more effective methods of educating students. The development of a global society, where educational systems and their products are compared side-by-side, has increased the desire to improve education among all nations. Two and a half decades ago, *A Nation at Risk* (National Commission on Excellence in Education, 1983) documented the status of education in the United States. The commission found declining test scores, high illiteracy percentages, and substantial drop-out rates. Of greatest concern to some, particularly politicians, was the finding that achievement of U.S. children had slipped below that of children in other industrialized countries, particularly in science and mathematics. These findings spurred researchers and educators to search for solutions.

As private and federal entities sought remedies to these educational maladies, first priority was given to identifying the variables that could be directly linked to students' academic achievement (Fehrmann, Keith, & Reimers, 1987). In particular, researchers hoped to identify key variables of academic achievement that could most easily and effectively be manipulated. One such variable that had shown promise in the research was parental involvement (Seginer, 1983). Preliminary research suggested that increasing and improving parental involvement, a potentially manipulable variable, might aid in turning back the slide of American education. From that time until now, an almost

overwhelming amount of research regarding parental involvement has been conducted. For this study, one specific line of research, the impact of parental expectations on students' achievement, is of particular interest.

This review is organized into three major sections. The first section is a general review of the broad field of parental involvement research, primarily focusing on the link between parental involvement and academic achievement as demonstrated by individual studies, meta-analyses, reviews, and compilations. An abbreviated history of parental involvement research as well as a discussion of challenges facing this research is also included. In the second section, I review the literature on parents' beliefs regarding their role in their child's education. The third and final section focuses on parental expectations specifically. In addition to a review of research studies specifically related to parental expectations, this section addresses the challenges, limitations, and deficiencies of parental expectation research.

Because many parental involvement studies include findings relevant to more than one section of this review (general parental involvement, parental roles in education, and parental expectations), studies that address more than one of these topics may receive more than one treatment. To limit repetitiveness, the complete background material for each study will be included in its first treatment, with subsequent treatments limited to pertinent information. Further, each section includes a "determinants, antecedents, or influences" section. Namely, what determines parents' involvement choices, influences on parents' beliefs, and what are the antecedents of parents' expectations? Because the major influences in each of these three sections are similar (culture/ethnicity, SES, parents' education level, etc.) there may be some repetition of studies and ideas.

However, understanding that this study will focus on factors that influence parental expectations justifies this repetition.

Section I: Parental Involvement and Academic Achievement

A Brief History

Studies consistently linking parental involvement with student achievement did not go unnoticed by parents, educators, or policy-makers. In 1989, President Bush and the nation's governors convened the first National Education Summit to discuss ways to strengthen educational performance in the United States. The summit led to the creation and adoption of a set of *National Education Goals* aimed at the year 2000 (National Education Goals Panel, 1999). Persuaded by the parental involvement research conducted up to that point, two of the eight goals adopted by the panel were directly related to parent involvement. With peculiarly forceful language, the eighth goal stated, "Every school will promote partnerships that will increase parental involvement and participation in promoting the social, emotional, and academic growth of children."

This governmental endorsement added fuel and funds to parental involvement research. Federal and state educational agencies began researching and funding research surrounding the effects of parental involvement, parent and school partnerships, and various programs designed to increase parental participation at-school and at-home (Herrold & O'Donnell, 2008; Nord, 1998; Nord & West, 2001). Additional government support came in 2001 when increasing family involvement was identified as one of the six target areas in the *No Child Left Behind Act.*

Private and semiprivate groups also became involved such as The National Committee for Citizens in Education and The Southwest Educational Development Lab

(SEDL). These groups were responsible for funding major works, reviews, syntheses, and websites dedicated to parental involvement (e.g., Henderson & Berla, 1994; Henderson & Mapp, 2002). Additionally, some colleges of education and family sciences sponsored workshops, websites, and studies (e.g., Harvard Family Research Project). These organizations did much to expand the directions and increase the number of studies regarding parental involvement in education.

Defining Parental Involvement

As Fehrmann et al. (1987) lamented in their research, parental involvement has not been a unitary construct. Researchers have understood the term parental involvement to mean a large array of parental attitudes and activities. Why is it important to operationalize and define parental involvement? A quick review of abstracts from parental involvement research reveals that validity and generalizability are significant problems in this field. When individual authors conclude that parental involvement is indeed positively correlated to achievement, the reader is often left to ascertain what exactly the author means by parental involvement. In addition to an array of activities, outings, and attitudes, it may also be defined with considerable vagueness. Grolnick and Slowiaczek (1994) defined parental involvement as parents' commitment of resources to the academic arena of children's lives. Even a careful reading of the study does not guarantee to clear up this confusion. As Jeynes (2005) and Fan and Chen (1999) bewail, even within the methods sections, there sometimes remains a certain level of ambiguity.

With the increase in number of parental involvement studies, researchers continued to call for a more unified definition (Fan and Chen, 1999; Henderson & Mapp, 2002) This was particularly true for those wishing to collect and aggregate data for meta-

analyses and other similar reports (Jeynes, 2005, 2007). For his meta-analyses, Jeynes defined parental involvement as parental participation in the educational processes and experiences of their children. Jeynes reported that this definition was gleaned from the most prevalent and influential parental involvement researchers and theorists (Epstein, 2001; Henderson & Mapp, 2002). Even though this definition is concise, exactly what constitutes educational processes and experiences is an area of considerable debate.

For those desiring to compile and examine data from multiple studies, Pomerantz, Moorman, and Litwack (2007) proposed that most definitions of parental involvement can be operationalized into the broad categories of (a) at-school involvement, and (b) at-home involvement. Other researchers have also included a third category; (c) parenting styles and attitudes. Even these categories contain considerable variety and merit some explanatory definition.

Defining At-school Involvement

At-school or school-based involvement has typically meant attendance at, or participation in, school-based activities and functions. These normally include general school meetings, regularly scheduled parent-teacher conferences, and other school events (Nord & West, 2001). Lee and Bowen (1996) suggest that this might be deemed the "traditional" measure of parental involvement and that this basic type of at-school involvement stands as an important predictor of student academic achievement. In addition to general school functions, researchers have included parental communication with teachers, fundraising, volunteering in classrooms, attendance at athletic and other extra-curricular performances, involvement in Parent-Teacher associations, school governance roles, and attending parental improvement workshops (Epstein, 1996; Nord

& West, 2001). Caution must be exercised even within this definition. It is highly likely that participation in the different activities that constitute at-school involvement do not produce equal results. For example, attending a sporting activity may not be equally important to a student's academic achievement as attendance at a parent-teacher conference?

Defining At-home Involvement

Definitions of at-home or home-based parental involvement have been considerably varied and frequently vague. Definitions of at-home involvement have included parental assistance on homework (Keith, Reimers, Fehrmann, Potterbaum, & Aubrey, 1986), limiting amount of television viewing (Fehrmann et al., 1987), management of children's playing and reading time, (Lee & Bowen, 2006), parental communication with a child about schoolwork (Jeynes, 2007), discussions of educational expectations (Lippman, 2008), playing active games, going on family outings, visiting libraries and museums, and other parent/child educational experiences (Vaden-Kiernan & McManus, 2005). This variety in definitions of at-home parental involvement makes determining its true impact a significant challenge.

Defining Parental Style and Attitudes

Defining parental style and attitudes has likewise been challenging. Although the number of studies that focus solely on the educational effects of parental attitudes and style is relatively small, many studies include this as a component of their broader research questions (Fan & Chenn, 1999; Jeynes, 2005). These inquiries have ranged from postsecondary educational expectations (Lippman et al., 2008), to parents willingness to

accept and share educational responsibilities with their children's school (Wong & Hughes, 2006). Other studies have included evaluative features such as categorization of parents into authoritarian, authoritative, and passive parental styles (Slicker, 1996). As might be assumed, these often self-reported measures may be more factual in terms of perception than actuality.

A Review of Studies: Parental Involvement and Academic Achievement

Introduction

From the earliest days of parental involvement research, it has been suspected, if not assumed, that different types of parental involvement have different effects on students and their educational achievement (Seginer, 1983). As Jeynes (2007) explains, understanding how parents can most easily and productively help their students is particularly important. The parent who asks what they can do to help their child may find it easier than they think. Furthermore, some of parental involvement methods typically thought of as strongest—may not be.

Examining and measuring every possible parental involvement action separately would be inefficacious and nearly impossible. For example, it is possible that visiting the zoo has a slightly greater effect on a child than visiting an aquarium; nevertheless attempting to explore all of the subtle differences between similar types of parental involvement would be a monumental task producing minimal benefit. Contrary to this problem, we find that in some studies, data have been aggregated from what seem to be very loosely associated actions. For example, studies have combined data regarding

attendance at a parent-teacher conference with attendance at a sporting event (Nord & West, 2001).

Fan and Chen (1999) conducted a seminal meta-analysis including 25 empirical studies in which 92 correlational coefficients were presented. To avoid data contamination, the authors limited their pool to studies where Pearson Correlations between any of the parental involvement indicators and any of the achievement outcomes could be obtained. The authors conducted two separate analyses on the data: (a) a general linear model—including all of the correlations from each study, and (b) a study-effect meta-analysis--designed to guard against a skewing of the data due to multiple effect sizes from single studies. Their meta-analysis provided at least two important insights into parental involvement research. First, Fan and Chen concluded that the relation between academic achievement and parental involvement cannot be generalized across different operational definitions of parental involvement or across different areas of academic achievement. Second, they found that different types of parental involvement had different outcomes on students' academic achievement.

In light of these and similar findings, a review of parental involvement research may best be conducted by initially examining the involvement types separately. In this review, therefore, I will review the research using the categories recommended by Pomerantz, Moorman, and Litwack (2007): (a) at-school parental involvement, and (b) at-home parental involvement. I will accomplish this by first examining findings from individual parental involvement studies followed by an examination of meta-analyses and compilations that compare the effects of different types of parental involvement in a side-

by-side fashion. I will also make brief mention of research regarding the influence of "parental styles" on academic achievement.

At-school Involvement and Academic Achievement

Studies regarding parental involvement at-school have produced generally consistent results (Pomerantz et al., 2007). This is particularly true when the experimental variable has been parents' level of participation in traditional at-school activities such as parent-teacher conferences, PTA meetings, or school open-houses. Typically, the data have revealed a moderate, yet significant, correlation between at-school involvement and academic achievement. The research of Lee and Bowen (2006) is a good example of typical research findings. Using an ethnically and economically diverse sample, Lee and Bowen performed a hierarchical multiple regression for predicting academic achievement. Parents were surveyed regarding several types of academic involvement as well as personal background characteristics. The regression analysis revealed that, among other things, parents' involvement at school was significantly correlated to students' academic achievement. Even though the correlations were only moderate for parental involvement at school, the effect size was larger than that of ethnicity and economics for the same model.

Studies focusing on parents' at-school involvement also reveal that even minimal increases of parental involvement may positively affect student achievement. Using data taken from the Early Childhood longitudinal Study (Kindergarten Cohort), Glick and Hofmann-Marrott (2007) examined the academic achievement of 13, 618 students as they moved from kindergarten through the third grade. As part of the data collected, parents were asked if they had attended either an open house, PTA meeting, or parent teacher

conference anytime during the year. Using multiple regression analysis, the researchers found that when parents attended even one "at-school" event, students performed better on their standardized math test. This statistic held true regardless of ethnicity or other familial background characteristics. From this, the authors concluded that every child benefits from increased parental involvement and that the efforts being made to increase parents' involvement in their children's schooling were necessary and justified. It may also be that parents who attended at-school events were also more engaged in their children's education at home.

Much of parental involvement research relies upon comparisons between families. This type of comparison can create reliability challenges due to the number of extraneous variables that might be at play in any given family setting. The longitudinal work of Dearing, Kreider, Simpkins, and Weiss (2006) added an important aspect to existing research by examining the effects of increasing involvement within specific families. Using a sample of 281 low-income and ethnically diverse students, their analysis revealed that increased parental involvement between kindergarten and fifth grade was associated with increased literacy performance. In fact, their data show that increasing family involvement at the early grades predicts literacy better than family income, maternal education levels, and ethnicity. Not only is this study significant because it eliminates many confounding variables that arise when making comparisons between families, but it also shows parental involvement as a possible key to decreasing the achievement gap between children from diverse economic and ethnic backgrounds. Furthermore, this research infers that there may be causal support for increased parental involvement.

Parental involvement at school has also been linked to achievement indirectly. Sheldon (2007) examined the effects of schools' implementation of parental and community partnership programs (NNPS) on school attendance, a factor shown to be directly associated with academic achievement. These programs were specifically designed to increase parents' at-school involvement through increased parent-teacher and parent-school communication, as well as family and community-involvement activities linked to school goals. Using data provided by the state of Ohio to compare student attendance in elementary schools that implemented partnership programs with those that did not, Sheldon found that students' attendance actually increased from one year to the next. In comparison, schools that did not implement such programs experienced a slight decline during the same period of time.

The data infer that school-based involvement may also provide specific benefits to students that home-based involvement does not. Henderson and Berla (1994) found this to be the case in their SEDL review of parental involvement literature. These authors report that when parents are involved at school, not just at home, children tend to do better and to stay in school longer. Henderson and Berla note that although the family learning environment makes important contributions to achievement, children still tend to fall behind if parents do not participate in school-based activities, develop relationships with their children's teachers, and are aware of what is happening at school.

Research suggests that school-based parental involvement also increases the likelihood of students pursuing postsecondary education. Sandefur et al. (2005) used four waves of the National Educational Longitudinal Survey (1988, 1990, 1992, 1994) to examine the correlations between various factors and the likelihood of a student pursuing

postsecondary education. Multinomial logit models revealed that when parents participated in an average of three school activities, the likelihood of their child pursuing any type of postsecondary education increased by 5%. Further, children whose parents participated in at-school activities were also 5% more likely to pursue a 4-year college degree as opposed to a 2-year degree or certificate. Although 5% may appear minimal, it must be considered in context of the total variance between predictor variables which is frequently less than 20%.

As suggested in the Fan and Chen meta-analysis (1999), at-school involvement may be associated with some types of academic achievement more than others. In Jeynes' (2005) meta-analysis of studies involving elementary students, he found that parental participation or attendance at school events had an overall effect size of .21 of a standard deviation (computed using the Hedges *g* measure of effect size and conversion formulas provided by Glass, McGaw, and Smith [1981]). When measured using grades, the effect size was .39, using standardized tests, .22, and other measures, .08 of a standard deviation unit. In his 2007 analysis involving high school students, Jeynes found that the effect size for participation or attendance at events was .21 when measured by grades. However, there were no statistically significant results when measured by standardized tests, and when measured by other instruments such as teacher evaluation, the effect size jumped to .50 of a standard deviation unit. This may also suggest that teachers behave differently towards students whose parents are highly involved—particularly when determining grades.

From these statistics, it becomes obvious that not only is there variation among the correlations between different types of parental involvement, but across measurement

instruments as well. Jeynes (2005) presents two possibilities for consideration regarding this phenomenon; (a) parental attendance is more likely to help students assimilate the specific material covered in school than it is to help students excel in the broad-based material often covered on standardized tests, and (b) parental participation in school enhances the relationship between parents and teachers, which can tend to improve grades.

As is evident, not all of the data from these studies are as consistent and clear as one might like. The work of Englund, Luckner, Whaley, and Egeland (2004) revealed the sometimes tentative nature of parental involvement research. The authors conducted a longitudinal study with a sample pool of 187 families with the objective of examining the relation between various parental and educational factors. Contrary to numerous other studies, their path analysis revealed that school-based parental involvement (measured by parent-teacher communications and meetings) did not directly correlate with children's academic achievement in the first grade. Children's first grade achievement did correlate with parents' future school-based involvement. By the third grade, however, parents' involvement levels were correlated with their academic achievement as well. Puzzled by these results, the authors concluded that their measurement instrument for parental involvement (an assessment made by the teacher of how well they knew the parents, how concerned they perceived the parents to be regarding their child's education, and if the parent had attended parent-teacher conferences) may have been partially to blame for the lack of connection between parental involvement and student achievement among first graders.

In summary, the data from these representative studies strongly suggests that "at-school" parental involvement, when defined using somewhat traditional measures, is significantly and positively correlated with student achievement. Furthermore, the research infers that the effects of parents' at-school involvement may be equally important as some parental background features such as education, income, and ethnicity.

Scattered throughout the literature are studies that conclude that increases in parental help with homework, or increases in parents' communication with the school are negatively associated with achievement. Caution must be taken with these findings. As described by Pomerantz et al. (2007), this phenomenon can often be explained by the familiar scenario of a student beginning to struggle in school whose parent consequently begins to assist more with homework and increase their school communications. Studies that have examined this phenomenon support the idea that even though there appears to be an immediate negative correlation, parents' increase in involvement eventually does lead, even when delayed, to greater academic achievement (Pomerantz et al., 2007).Thus we see that in some instances, high levels of parental involvement may not be the cause of poor academic achievement, but rather the consequence of it.

At-Home Involvement and Academic Achievement

The research and findings surrounding "at-home" parental involvement are not as clear as those regarding "at-school" involvement. This may be due to the greater ambiguity of the at-home operational definition. As previously noted, definitions of at-home involvement have included monitoring homework, taking children to the library, having educational discussions, reading newspapers together, and going on weekend camping trips—to name just a few. That is not to say, however, that all of the research is

unclear or that none of the findings has been significant. Generally, the research has favored basic in-home practices such as reading with children, assisting with homework, having educational discussions, and high expectations.

Although somewhat dated, the work of Fehrmann et al. (1987) on the influence of at-home involvement on high school grades is an excellent representation of the research examining at-home aspects of parental involvement. Their research sample consisted of 28,051 high school seniors selected from the first wave of the National Center for Education Statistics' High School and Beyond Longitudinal Study. The criterion measure used by these researchers was a series of questions that measured students' perception of their parents' general involvement in their academic and social lives. Questions included: (a) my parents almost always know where I am and what I am doing, (b) my mother keeps close track of how well I am doing in school, and (c) how much has each of the following persons influenced your plans for after high school?

Using a path analysis to explore a possible causal relation between various predictor variables and students grades, Fehrmann et al. (1987) found that the primary path of interest from parental involvement to grades was indeed meaningful with a path coefficient of (β=.129). The results also suggested that parental involvement indirectly affects grades through an association to time spent doing homework. The combined direct and indirect path coefficient (β=.157) of parents' at-home involvement was also meaningful, suggesting parents' at-home involvement as extremely important.

Fehrmann et al. (1987) conducted additional analyses on the data to examine the possibility of an optimum level of parental involvement. Using a regression analysis, the authors found that the more parents are involved in their children's academic lives, the

greater their chance of academic success. The data again revealed the correlation between parents' educational involvement and student success to be equally as significant as other features such as parents' ethnicity and education levels.

The research of Caplan et al. (1992) with Indochinese refugee families further confirmed the ideas of many theorists regarding the link between the at-home parental involvement of these families and the unusual academic achievement of their children. The sample consisted of 200 nuclear families with 536 school age children. Twenty-seven percent of the families had four or more children with the average family residing in the United States 3.5 years. Both quantitative and qualitative analyses were performed.

In short, Caplan et al. (1992) found that parents in these families were highly involved in a variety of at-home educational activities that were associated with increased academic achievement. Nearly half of the sample parents read aloud to their children, either in English or their native language. Homework dominated the evening activities, with parents assuming chores to enable the children to focus on homework. They also found that parents created a relative equality between the sexes—demonstrating an equal importance for educating boys and girls. Additionally, they found that parents had created an environment of learning. They did this by continually communicating a love for learning, communicating a belief in children's potential to be the master's of their own destiny, and holding up education as an opportunity for economic and social advancement. The authors concluded that the at-home activities of these refugee parents did indeed contribute substantially to the unusual academic success of their children

The more recent work of Lee and Bowen (2006) highlights the discrepancies that frequently surround the value of at-home parental involvement. Lee and Bowen sampled

415 third through fifth graders to examine the level and impact of five types of parent involvement on elementary school children's academic achievement by race/ethnicity, poverty, and parental educational attainment. Through a series of *t* tests, chi-square statistics, and hierarchical regressions, they concluded that parents of different backgrounds participated in their children's academic lives in different ways. They also concluded that not all types of parental involvement were equally associated with students' academic success. Their hierarchical multiple regression predicting academic achievement revealed that parental involvement at school with coefficients of (β=.20) and parental educational expectations (β=.44) had the highest correlation with academic achievement. The data also demonstrated that homework help (β=-.18) and time management (β=-.01) were negatively associated with school achievement.

As is the case with school-based involvement, home-based involvement is also associated with an increase in the likelihood of their pursuing postsecondary education. Conducting multinominal logit statistics on four waves of the National Educational Longitudinal Study, Sandefur et al. (2005) found that children whose parents expected them to earn a 4-year degree were 12% more likely to pursue a 4-year degree than children whose parents merely expected them to complete high school. Children whose parents frequently discussed school activities and classes with them were 15% more likely to pursue postsecondary education and 20% more likely to pursue a 4-year degree than children whose parents rarely or never discussed education at home.

In summary, the findings regarding the correlation of at-home parental involvement are generally positive, yet frequently inconsistent. This may be due to the wide range in operational definitions as well as the difficulty in measuring such

involvement. When defined by traditional at-home involvement activities such as reading, communicating, and holding high educational expectations, the findings increase in power and stability. Findings regarding parental volunteerism, home management, and homework checking have shown no real consistency.

Meta-Analyses of Parental Involvement and Student Achievement

As previously suggested, meta-analyses that include a comparison of data by parental involvement types have added substantial strength and clarity to parental involvement literature. These studies allow for a side-by-side comparison of various types of school-based and home-based involvement. As mentioned, the Fan and Chen (1999) meta-analysis revealed considerable variation in the relation among the different types of parental involvement and student achievement. Through a series of statistical analyses, Fan and Chen calculated the mean correlational coefficients as a measure of effect size as suggested by Cohen. Their data substantiated the consistent strength of at-school involvement (r=.317). This correlation, however, was found to be less than the correlation between parents' expectations and student success (r=.397). Interestingly, Fan and Chen also found that "supervision," as characterized by homework checking and the establishment of rules, had a relatively low correlation at (r=.094). Parents' communication with their child about educational matters was moderately low at (r=.192). Taken together, these four findings represent a medium effect size in the social sciences. As illustrated by the authors, this medium effect size, while seemingly modest, still represented a substantial increase in the success rate of academic achievement--a strong case for parents' at-school involvement.

Jeynes conducted a series of meta-analyses aimed at determining the relation between different types of parental involvement and academic success among various student populations. Utilizing the Hedges *g* and other conversion formulas to determine what Jeynes termed as an "overall" effect size, his first meta-analysis (2003) examined the correlation of parental involvement factors and academic success among students from racial minority backgrounds. Using a total of 20 empirical studies involving mostly African-American children, Jeynes investigated the overall relation of parental involvement and students' success as well as the correlation of different types of parental involvement. He found the aggregated data from all types of involvement to reveal a positive correlation between parental involvement and students from minority populations.

The data also revealed significant differences in the "overall" effect sizes of different types of parental involvement. The effect size for at-school participation, specifically, was .51 for studies featuring all or mostly African-Americans. For the same population, the effect size for parental style was .44, parental expectations, .57, parents reading to children, .39, communication, .53, rules, .35 and homework checking and help, .72. As with the Fan and Chen analysis, the correlation with at-school participation remained consistent and strong, but was superseded by the correlation between parent expectations and academic achievement. Contrary to the Fan and Chen analysis, the effect size for home management (rules) and homework help was found to be positive and significant. This finding suggests that the correlation between some types of parental involvement and academic success may be moderated by outside factors, such as

race/ethnic background. This idea is substantiated by the findings of Lee and Bowen (2006).

Jeyens second meta-analyses (2005) focused on parental involvement among urban elementary school students. Not surprisingly, his findings were similar to those of his first analysis and that of Fan and Chen (1999). Among the 41 studies involving elementary school students, parental involvement as a whole was associated with academic achievement by about .7 of a standard deviation unit for both White and minority children. The effect-size of at-school involvement specifically was .21, a modest, yet significant correlation. Similar to other studies, Jeynes found that parental expectations had the highest correlation at .58. As is also typical, he found that reading was highly correlated at .42, with lower correlations for communication at .24 and parental style at .31. In contradiction to the positive correlation found in his meta-analysis from 2003, Jeynes found results more similar to Fan and Chen regarding the negative correlation -.08 between homework help and academic achievement.

Jeynes third meta-analysis (2007) focused on parental involvement factors among urban secondary school students. Jeynes explains that this specific analysis was necessary due to the findings of some individual studies that parental involvement has much less correlation with academic achievement as students proceeded through the middle and high school grades (Green et al., 2007). In his analysis of 52 studies, Jeynes examined the overall impact of parental involvement as well as specific components of parental involvement. Four measures of educational outcomes were used: (a) combined academic achievement, (b) grades, (c) standardized tests, and (d) other measures including teacher rating scales and indices of academic attitudes and behaviors. Jeynes found that parental

involvement as a whole correlates with all the academic variables in the study by about .5 to .55 of a standard deviation unit.

Although these results are both positive and significant, it does suggest that indeed there is some decrease in the correlation between parental involvement and academic achievement for students in secondary grades. Importantly, Jeynes data also suggests that some types of parental involvement gain (or decrease) in importance with older students. For example, parental expectations had a correlation of .88—compared to .58 among elementary students. Parental style .40 and parental communication .32 were also found to increase in importance with older students. Again, these effect size represented what Jeynes labels as an "overall" effect size generated by a combination of statistical analyses.

Reviews and Compilations

In addition to the many meta-analyses performed, parental involvement research has benefited from a plethora of reviews and compilations.

Strong Families, Strong Schools (1994), prepared by the US Department of Education, reviewed 30 years of parental involvement research. The major conclusion of this report was that the optimal method for increasing children's academic achievement was to increase the parents' educational involvement at-home. The executive summary explained that three factors over which parents exercise authority—student absenteeism, variety of reading materials in the home, and excessive television watching—explained nearly 90% of the difference in eighth grade mathematics test scores across 37 states on the National Assessment of Educational Progress. Not surprisingly, the report also extolled the virtue of reading in the home: "The single most important activity for

building the knowledge required for eventual success in reading is reading aloud to children" (p. 6). The authors conclude, "Studies of individual families show that what the family does is more important to student success than family income or education. This is true whether the family is rich or poor, whether the parents finished high school or not, or whether the child is in preschool or in the upper grades" (p. 6).

Based on the research presented in *Strong Families, Strong Schools*, the Department of Education delineates four challenges to parental involvement in the United States: (a) finding time to be involved, (b) uncertainty about what to do and the efficacy of involvement, (c) cultural and language barriers, and (d) a lack of a supportive environment. To overcome these challenges, the authors cite research findings to suggest that families (a) read together, (b) use TV wisely, (c) establish family routines, (d) schedule daily homework times, (e) monitor out-of-school activities, (f) talk with children and teenagers, (g) communicate positive values and character traits, and (h) express high expectations and offer praise and encouragement for achievement. They also recommend that parents ensure their middle and secondary students are enrolled in challenging courses, keep in touch with the school, and use community resources (such as after-school programs and adult education).

In addition to providing resources and encouragement for family and community involvement and partnerships, it became the responsibility of the Department of Education to measure the country's progress toward these goals. To assist in this duty, the National Center for Educational Statistics added a "Parent and Family Involvement in Education" section to the National Household Education Surveys Program. Findings from these surveys, along with the inclusion of parental involvement research in The

Department of Education's *Condition of Education* series, have added to and clarified previous research, particularly in the realm of school, family, and community partnerships. For example, *The Condition of Education 2009*, (Planty et al., 2009) reported that 89% of students had parents who reported attending a general school or PTO/PTA meetings. It was also noted that parent participation was higher for kindergarten through grade 8, than for parents of 9th through 12th graders. Additionally, participation was higher in families with higher incomes.

The *Evidence Series,* another important step for parental involvement research, was undertaken by the National Committee for Citizens in Education. This project, known as the *Evidence Series,* began in 1981 with *The Evidence Grows* (Henderson, 1981) and included 35 studies. According to the author, the astonishing finding in this report was that all of the studies pointed to the same conclusion—any reasonably well-planned, comprehensive, long-lasting parental involvement will measurably benefit children, families, and schools. In 1987, the committee released *The Evidence Continues to Grow* (Henderson, 1987). This report added an additional 15 studies with conclusions similar to those in *The Evidence Grows*. As the title insinuates, Henderson concluded that nearly all research examined in the second series demonstrated a positive correlation between increased parental involvement and academic achievement. This second series also highlighted the fact that parental involvement had come into its own as a topic of research.

When the third report, *A New Generation of Evidence: The Family is Critical to Student Achievement* (Henderson & Berla, 1994) was released in 1994, the *Goals 2000 Educate America Act* had already propelled parental involvement into the foreground of

education research. Henderson and Berla added 39 additional studies whose topics demonstrated the expansion of parental involvement research, such as family background and behaviors, diverse cultural backgrounds, and the effects of socioeconomic status. Although they begin their executive summary by stating that the evidence for parental involvement is beyond dispute, the report does mention one dissenting study by Karl White (White, Taylor, & Moss, 1992) and fellow researchers from Utah State University. Henderson and Berla are quick to note, however, that White's primary concern was with the low methodological rigor of some parental involvement research and not with the direction of the findings regarding the effects of parental involvement.

From the research reviewed, Henderson and Berla (1994) conclude that the most accurate predictor of a student's achievement in school is not income or social status, but the extent to which that student's family is able to (a) create a home environment that encourages learning, (b) express realistically high expectations for their children's achievement, and (c) participate in their children's education at school and in the community. They suggest that increased parental involvement benefits families and schools, as well as individual children. They also found that higher parent and family involvement led to higher grades and test scores, better attendance, improved homework completion rates, fewer placements in special education, more positive attitudes and behavior, higher graduation rates, and greater enrollment in postsecondary education.

In a follow-up to the *Evidence Series*, SEDL produced *A New Wave of Evidence: The Family is Critical to Student Achievement* (Henderson & Mapp, 2002). Again, similar findings were reported. Namely, when parents are actively involved in their children's education, they have better academic performance, fewer behavior problems,

stay in school longer, have better attendance, and are more likely to go on to postsecondary education.

Additionally, Henderson and Mapp found that parental involvement was particularly important for parents of middle and high school students. They report that active parental participation can help smooth the often difficult transitions from elementary school to middle school and from middle school to high school. Furthermore, the authors found that many of the studies examining "parent involvement programs" reported that these programs indeed increased parental involvement in schools and at-home.

SEDL's latest report, *The School-Family Connection: Looking at the Larger Picture, A Review of Current Literature* (National Center for Family and Community Connections with Schools, 2008), investigated 31 recent parental involvement studies, particularly focusing on family-school partnerships as recommended by Epstein (2001). This current review arrives at the same conclusions of previous research; when family members are actively engaged with their children's teachers and school staff, the children tend to adjust better to school and have better performance. In fact, even minimal or poorly structured support makes a difference in the performance and decisions of students.

The School Family Connection elaborates significantly what schools can do to increase parental support. Researchers found that schools that create a sense of welcome by (a) creating structures that foster a culture of learning, (b) minimalizing language barriers, (c) creating multiple outreach structures and procedures, and (d) increasing public interaction—increase the amount of active family involvement in their school.

Current Directions of Parental Involvement Research

What are the current directions of parental involvement research? What questions have been left unanswered? How has the parental involvement research conducted thus far shaped public education today? A discussion regarding parental involvement research would be incomplete without at least briefly discussing these important questions.

As demonstrated by the most recent SEDL title, *The School-Family Connection: Looking at the Larger Picture*, the study of parental involvement has changed in significant ways over the past two decades. Much of that shift has come in consequence of the sheer amount of research conducted in the field. As is evident in this review, the question of whether parental involvement is good for children in the mind of many researchers has been answered. A review of current literature reveals that a majority of recent studies assume that parental involvement is good for children and significantly contributes to their school success. The natural progression seems to be from questions focused on "if" parental involvement is effective, to studies based on an entire series of questions relating to the "how, why, and which" of parental involvement.

One particularly prolific line of research—based on findings that parental involvement benefits all children—seeks to understand why and how parents are or are not involved in their children's education: more specifically, how and why parental involvement varies by student features, such as age and grade, as well as parental background features, such as socioeconomic status, ethnicity, parental education, and family structure. Due to the popularity of this topic and the high level of interest it has generated, I will consider some of this research's most significant findings.

Determinants of Parents' Involvement Choices

The Effects of Student Age and Grade on Parental Involvement

A majority of early parental involvement research was conducted with elementary school children and their parents. This focus on younger children and their parents might well have been caused by perceptions that elementary school parents are more involved in their children's schools, or that greater communication exists between the schools and parents of younger children. The research data has substantiated these assumptions. Using parent-reported data from the 2002-2003 Parent and Family Involvement (PFI) survey as their data set, Vaden-Keirnan and McManus (2005) found that as children move through the grades, parents report they receive less child-specific notes and emails from their schools. Indeed the 2002-2003 PFI data set shows that communication with the school in every category, except college expectations, decreases as children move from elementary school to high school. Furthermore, numerous studies have concluded that, in fact, parents are less involved in their children's schools throughout the secondary grades (Green et al., 2007; Jeynes, 2007).

Many researchers have sought to explain this decline in parental involvement with older students. Jeynes (2005, 2007) suggests that higher parental involvement in younger children might be due to the greater amount of influence parents have over the lives of younger children. He also proposes that parents of older adolescents are already more convinced of their children's academic strengths and weakness. Therefore, parents see becoming heavily involved in some areas where a student is struggling as ineffective or futile. Green et al. (2007) point to developmental causes for decreased parental involvement. Children in their teenage years have an increased need for independence

and begin to focus on peer relationships. They also note that parents choose different types of involvement as their children become teenagers. For example, parents of teenagers do less helping on specific homework and provide more autonomous support, such as encouraging and praising. Nord (1998) found that secondary schools have significantly less opportunities for parents to be involved than do elementary schools. When combined with a decrease in school-to-parent communication, parents of secondary students may feel that their involvement is no longer needed or necessary.

Even though parental involvement may change with older children, research supports the need and importance of parental involvement with older students. Fan and Chen (1999) conclude that age showed a very small moderating affect on the relation between parental involvement and academic achievement. As noted earlier, Jeynes (2007) found that effect size for parental involvement among urban secondary students remains very significant at .50 to .55 of a standard deviation unit. Henderson and Berla (1994) conclude that parents who are actively involved with their children's schooling help to make the shift from middle to high school easier. Fehrmann et al. (1987) found that when using grades as the measurement instrument, parental involvement among high school students was still a stronger predictor than any of the family background or status predictors. In fact, in their pathway analysis, parental involvement was only superseded by a student's ability and their amount of homework time.

Ethnicity and Culture

In a relatively short amount of time, a significant amount of research on the topic of ethnicity and parental involvement has been generated. Researchers have primarily sought to understand how, if at all, ethnicity and culture affect parental involvement. In

terms of the research, this topic has developed into a two part question: 1) does ethnicity and cultural background affect the way that parents are involved in their children's education, and 2) does ethnicity and background moderate the effects of parental involvement on academic achievement?

Question #1: Does ethnicity and cultural background affect the way that parents are involved in their children's education? Although more qualitative research needs to be conducted to clarify why, it is clear from the current research that culture does play a part in the way families are involved in children's education. One important point of caution is necessary when examining this literature; namely, the differences found between ethnicities are not "genetic" but" methodologic." Simply put, it is not a comparison between races but between the educational beliefs and practices found within particular cultures.

Barrueco, Lopez, and Miles (2007) surveyed a nationally representative sample of infants and families (N = 10,498) in a comparative study of Latinos and other cultures in their first years of life. Their data from a multivariate analysis revealed that at 9 months of age, there were no cognitive or motor skill differences in the children from any context. However, upon entering kindergarten, 70% of White children were able to recognize letters in comparison to 50% of Latino children. The authors concluded that this was the result of parenting behaviors in the first years of a child's life. Specifically, they found a trend for Latino American families to participate in less reading time with their young children than other types of American families. Cultural difference for family reading habits was substantiated in the results of Caplan et al. (1992) and their work with Indochinese refugees. In a descriptive examination of 200 families, they found that nearly

half of all Indochinese refugee families surveyed spent time daily reading together. As expected, they found that children from those families that read together achieved higher academic marks than those families who did not, even though all participants were from a similar cultural background.

As with other parental involvement features, culture appears to also indirectly correlate with students' academic achievement. In the Fehrmann et al. (1987) path analysis, they found little direct relation between ethnicity and culture on high school students' academic achievement. However, they did conclude that ethnicity and culture had a strong direct affect on other aspects that predict achievement, such as the amount of homework completed by a student and the amount of TV time parents allowed. Again, these factors were found to be matters of "practice" instead of "genetics." The authors concluded that even though the effect of ethnicity and background is indirect, it can prove to be substantial in determining academic achievement.

Lee and Bowen (2006) surveyed 415 parents from ethnically diverse backgrounds to examine the effects of culture on parental involvement features. Using comparison based analyses (*t* tests and chi-squared analysis), they found that ethnicity and culture was associated with the variability on more than half of their parental involvement measures. European American parents reported more frequent involvement at school and less frequent efforts to manage their children's time use at home. This was found to be just the opposite for Latino and African American parents, who were much stricter with home management but participated less in at-school activities. Lee and Bowen also found that the greatest differences among cultures were in the levels of parent involvement at

school. They noted that involvement at school was the highest for those parents whose culture and lifestyle most closely matched that of the school's culture.

In their report summarizing the results of the Parent and Family Involvement in Education Survey 2003 involving over 12,000 nationally sampled children in kindergarten through grade 12, Vaden-Kiernan and McManus (2005) found that ethnicity was a predictor to many of the educational attitudes, actions, and choices made by parents. For example, they found that 65% of Asian American parents reported taking their students to the library within the past month compared with 49% of African American parents, 44% of Hispanic parents, and 41% of White parents. In terms of school choice, 25% of African American parents, 22% of Asian parents, 14% of Hispanic parents, and 13% of White parents reported that they had moved to their neighborhood to make their students eligible to attend a particular public school. Again, these statistics might be interrelated with other demographic features and the schools available to low income families. Ethnicity was also a significant factor in the involvement of families with students who participated in special education. Vaden-Kiernan and McManus found that parents who reported that they worked with the school to develop or change the IEP (Individualized Education Program) for their child with special needs was higher for Asian/Pacific Island (93%) and White (92%) parents, than for African American (81%), and Hispanic (75%) parents.

In their work on ethnicity and language contributions to parental involvement, Wong and Hughes (2006) noted several differences in parental involvement according to ethnicity. The authors surveyed 179 teachers and 481 parents on parent school involvement, creating a sample of ethnically and linguistically diverse first-grade

children attending one of three school districts in Texas. Four groups were examined: White, Black, Hispanic-English speaking, and Hispanic-Spanish speaking. From their factor analysis, Wong and Hughes reported that Hispanic parents, particularly Spanish-speaking parents, reported low levels of communication with the school and a low sense of shared responsibility for their children's education. Black families reported more frequent school communication and a greater sense of shared responsibility than did Hispanic families. However, teachers rated their involvement activities with Black families lower than interactions with White or Hispanic families. In fact, teachers reported that Black families were the least involved ethnic group. This discrepancy in perceptions discloses that not only is their variety in family involvement among the different ethnic groups, but that involvement is perceived by parents and teachers differently. These statistics also serve to highlight the frequent challenge of finding a reliable measurement instrument for examining the benefits of individual parental involvement features.

Question #2: Does ethnicity and cultural background moderate the correlation between parental involvement and academic success? Contrary to the cultural and ethnic differences in the types of parental involvement in which parents engage, most research suggests that ethnicity and cultural background moderate minimally, if at all, the association between parental involvement and academic achievement. In three separate meta-analyses of parental involvement literature, Jeynes (2003, 2005, 2007) found that parental involvement continues to be a significant contributor to academic achievement regardless of ethnicity or culture. There was even some indication that parental involvement is more effective among mostly minority populations. Jeynes highlights this

as an area of celebration and notes the possibility of using parental involvement to help close the achievement gaps in the educational system.

Similar results were reported by Fan and Chen (1999), who found in their meta-analysis that ethnicity had very little moderating effect on parental involvement and student achievement. This conclusion supports the findings of research conducted 20 years earlier by the Rand Corporation (1976). From their analysis of the school preferred reading program in selected Los Angeles minority schools, the authors reported that in Black neighborhoods, the more vigorously the schools worked to involve parents and communities in the public school, the better the reading attainment of sixth-grade students in those schools.

Lee and Bowen (2006) reported mixed results, concluding that all groups benefited from some types of parental involvement, while other types of parental involvement seemed to benefit particular groups more than others. They also concluded that the types of involvement exhibited by parents from the dominant groups had the strongest associations with achievement.

In summary, research strongly suggests that parents with different cultural characteristics exhibit different types of involvement. Some of these differences stem from differences in educational heritage (Barrueco et al., 2007; Caplan et al., 1992), some from language and social barriers (Lee & Bowen, 2006), and still others from interrelated issues such as SES and parent education. However, the relation between parental involvement and student success have held across ethnic and cultural backgrounds, with some indication that parental involvement is even more important among often marginalized groups (Jeynes, 2003).

Socio-Economic Status

Research suggests that socioeconomic status and parental involvement in education have a somewhat linear relation. Nord (1998) reviewed the NCES:1996 statistics and found that children are more likely to have mothers and fathers who are highly involved in their schools as household income increases. The NCES utilized a national, geographically, and ethnically diverse sample to ask parents about four traditional types of school activities they could participate in during the school year. Parents who attended none or only one activity were classified as having low involvement, two activities as having moderate involvement, and three or four activities as being highly involved in their children's schools. For mothers' involvement, data showed that 68% of mothers in two-parent families were highly involved when the total household income was $75,000 or more compared to 42% of mothers in homes where the income totaled $25,000 or less. For fathers' involvement, data showed that 37% of fathers were highly involved when the total household income was $75,000 or more, compared to 15% of fathers where the income totaled $25,000 or less. Theorists suggest that the reason for such difference is rooted in the fact that parents from low-income homes have less time and flexibility due to their often labor-intensive work schedules.

Parental attitudes towards schools and schooling also appear to be correlated with socioeconomic status. Vaden-Kiernan and McManus (2005) found that when asking questions about school communications and whether school was challenging and enjoyable, SES was a determining factor in their responses. When parents were asked whether they strongly agreed that school makes it easier to be involved in their children's education, 45% of parents above the poverty level responded in the affirmative compared

to 35% of parents below the poverty level. Again, this might be associated with the quality of schools available for those from different demographics. Further, Vaden-Kiernan and McManus found that parents who had graduate or professional degrees had a higher average income and in turn planned to help their children pay for higher education themselves. In an earlier work, Baker and Stevenson (1986) concluded from their research that parents from higher SES knew the educational system better and were able to use that social capital to better help their children navigate the system. They noted that children from families with high socioeconomic status are 2.5 times more likely than low-SES children to continue education beyond high school, and six times more likely to enter college.

Research also suggests that socio-economic status has no meaningful moderating effect on the correlation between parental involvement and academic achievement. Henderson and Berla (1994) found that with high parental involvement, the achievement of lower-SES children reaches that of most middle-SES students. Jeynes (2003, 2005, 2007) supports the claims of Henderson and Berla and concludes that students from all backgrounds can benefit similarly with active parental involvement--with the possibility that those considered as "at-risk" benefit more than their fellow students. Benson, Buckley, and Medrich (1980) found that particular behaviors and interactions did reduce the achievement deficit of low-SES children when compared with their upper SES peers. In fact, Benson et al. found that low-SES children who had low parental involvement but who attended higher-income schools (often associated with better achievement) did poorer than low-SES children who attended low-income schools but had high parental involvement. These findings fortify the conclusion of Dearing et al. (2006) that even if

other predictors remain constant within a family, student achievement can be improved by increasing parental involvement.

Parents' Educational Attainment

Over the past several decades, it has been well documented that parents' level of education can be a significant factor in a child's education. More recently researchers have sought to discover if some of this can be attributed to higher or more effective parental involvement among those with higher levels of education.

Vaden-Kiernan and McManus (2005) found that in nearly every category of parental involvement surveyed, parents with higher education levels were more actively involved. For example, when asked if they had played sports, active games, or exercised with their children, 87% of parents with graduate degrees responded affirmatively compared to 84% with a college degree, 77% with a high school degree, and 68% with less than a high school degree. When asked if they had attended a general school meeting, 93% of college graduates responded affirmatively compared to 84% of high school graduates and 70% of those with less than a high school diploma. The percentage of parents with college degrees who provided additional educational opportunities for their children was double that of parents who had less than a high school diploma (70% to 35%, respectively). This pattern remains the same for at-home involvement, at-school involvement, and positive parental attitudes about school and schooling.

In their work with cultural capital and parental involvement, Lee and Bowen (2006) also found that parental involvement varied according to parents' education levels. Parents who had earned a 2-year college degree or higher reported more frequent involvement at school, more frequent parent-child educational discussions at home, and

higher educational expectations for their children. However, Lee and Bowen found that educational attainment was not significantly associated with homework help or time management. Possible reasons for these findings may be related to parents' comfort level with at-school involvement. Lee and Bowen conclude that parents with more schooling feel more comfortable participating in school-based activities. These findings are supported in the meta-analysis of Jeynes (2007) who found parent educational attainment to be a significant predictor in most areas of parental involvement.

Some research suggests that the correlation between parent educational attainment and student success may even supersede other predictive factors. Nord (1998) found that regardless of whether students lived in a single-parent or two-parent home, as parent education level increased, so did their levels of parent involvement. Nord reported that only 31% of mothers who had less than a high school degree were highly involved in their children's education, compared to 70% of mothers who had a graduate or professional degree. The same was found to be true for fathers. It is important to note that parent education levels not only serve as a direct factor for parental involvement, but increased education typically leads to higher income and greater parental involvement.

Family Structure

As with parent education, the effects of family structure on children's lives and academic achievement have been well documented. These findings increase in significance when one considers that in 1996, approximately 43% of students enrolled in grades 1 through 12 did not live with both their biological parents (Nord & West, 2001). In 2001, the NCES released *Fathers' and Mothers' Involvement in Their Children's Schools by Family Type and Resident Status* (Nord & West, 2001). This report, the most

comprehensive examination so far, used data from the 1996 National Household Educational Survey to examine the differences, if any, in parental involvement by family type and resident status. Parents were surveyed and scored according to their attendance at traditional school activities. Nord and West found that parents in stepparent families and single-parent families tend to be less involved than in two-biological parent families. Some of the most significant individual findings are as follows;

- Biological mothers in stepfather families are less likely to be highly involved in their children's schools (45%) than biological mothers in the two-biological-parent families (58%).
- Biological fathers in stepmother families are more likely to be highly involved in their children's schools (35%) than biological fathers in two-biological-parent families (28%).

  Stepmothers are more likely to show low levels of involvement (40%) in their children's schools compared to biological mothers (20%).
- Fathers' involvement in school (two-biological-parent families, single fathers, and stepfathers) is associated with a higher likelihood of students getting mostly A grades.
- Fathers' involvement in two-biological-parent families is associated with a lower likelihood of students ever repeating a grade. There is no evidence that this is true in other types of families.
- Biological mothers' involvement, regardless of family type, is associated with a higher likelihood of students getting mostly A grades.

- The school involvement of mothers is associated with a lower likelihood of 6th through 12th graders ever being suspended or expelled.

Nord and West concluded that there may be many interrelated causes for the decrease in parental involvement among stepfamilies and single-parent families. For example, single parents who are also sole providers are able to find less time for involvement. This is supported by their data showing that the payment of child support increases parental involvement and student achievement. The authors also noted that stepparents in their sample viewed their role and involvement in their stepchildren's lives differently than biological parents. This may be one reason why the average involvement of stepparents is less than that of biological parents.

The Rise of Family-School-Community Partnerships

The research considered up to this point leads to a most pressing question: How do we get parents to be more involved in their child's education? To meet this challenge, Epstein, unquestionably the most prolific and foundational parental involvement researcher for the past 25 years, has called for a fundamental shift in the way researchers and educators view parental involvement. This move features an expansion of the traditional focus of parent-child and parent-school, to a much broader focus that includes all members of a child's family, the entire school network, and the larger community. In the 2006 *Handbook for Research in Education*, Epstein and Sheldon discuss seven principles of parental involvement and parental involvement research that have emerged from their work of 25 years. These principles are:

1. School, family, and community partnerships is a better term than parental involvement.

2. School, family, and community partnerships is a multidimensional concept.
3. A program of school, family, and community partnerships is an essential component of school and classroom organization.
4. Programs of school, family, and community partnerships require multilevel leadership.
5. Programs of school, family, and community partnerships must include a focus on increasing student learning and development.
6. All programs of school, family, and community partnerships are about equity.
7. Methods of research on school, family, and community partnerships must continue to improve.

Although a number of studies have carried on in the traditional line of parental involvement research, the impact of Epstein's call for change can be seen in an ever increasing number of studies, websites, and school programs. Many colleges of education have changed the titles of their course offerings to reflect the idea of family, school, and community partnerships (Epstein, 2001; Epstein & Sheldon, 2006: Henderson & Mapp, 2002).

Conclusion

Regardless of definition, there is a consensus among most researchers that when examined as a whole, parental involvement in education is positively correlated with student academic achievement (Henderson & Berla, 1994). Numerous compilations and meta-analyses demonstrate that when parents engage in deliberate and consistent involvement, students have a greater chance of achieving academically. The research also suggests, however, that when considered separately, not all parental involvement

activities are of equal value in promoting academic achievement (Fan & Chen, 1999; Jeynes, 2005, 2007).

Findings demonstrate that traditional at-school involvement, such as attendance at parent-teacher conferences, open-houses, and other scholastic-based programs, is moderately and significantly correlated to improved academic achievement (Lee & Bowen, 2006). Even minimal increases in school-based involvement have shown to make significant impact (Glick & Hoffman-Marrott, 2007). Furthermore, parental involvement in at-school activities tends to increase postsecondary enrollment (Sandefur et al., 2005).

Although not as stable as the findings regarding school-based involvement, at-home involvement, particularly reading aloud with children and frequent educational discussions, produces significant and consistent gains in academic achievement (Fan & Chen, 1999; Fehrmann et al., 1987; Lee & Bowen, 2006). The strongest correlations between home-based involvement and academic success continue to be found in parents' educational expectations and aspirations for their children (Jeynes, 2003, 2005, 2007).

Building on the conclusion that parental involvement benefits all children, researchers have sought to answer questions regarding how and why parents chose to be involved. Research findings suggest that several factors influence decisions parents make regarding their academic involvement. Among the strongest predictors of involvement are children's age (Green et al., 2007; Nord, 2008), parents' ethnicity/culture (Barrueco et al., 2007; Caplan et al., 1992), parents' socioeconomic status (Nord, 1998), parents' education level (Vaden-Kiernan & McManus, 2005), and family composition (Nord & West, 2001).

Current research in parental involvement has expanded to include all members of the child's family, school, and community. This expanded vision has led to the development of family, school, and community partnership programs across the nation. Much of the current research is aimed at examining the effectiveness of such programs and how they might be improved (Epstein & Sheldon, 2006; National Center for Family and Community Connections with Schools, 2008).

Parental involvement research and practices continue to generate many questions and challenges. Even though more than two-third of parents now attend some type of parent-teacher conference or general school meeting, many parents are failing to be involved in their children's education at home. Some of these challenges stem from differences in the parent's culture, educational background, and language barriers. As the United States continues to move in the direction of cultural and linguistic diversity, Valencia, Perez, and Echeveste (2006) note that the largest problem will continue to be getting the information about the power and practices of parental involvement into the hands of the parents, particularly those that do not speak English at home.

Section II: How Parents View their Role in Education

As part of a natural research progression, a majority of research involving parental involvement (family, school, and community partnerships) has moved beyond the question of whether parents' involvement is beneficial, and is now seeking to understand how and why parents become involved in their child's education. Fundamental to these lines of research is an understanding of what parents view as their role in their child's education and how that view is developed. It would be, however, unreasonable and virtually impossible to try and arrive at a single and generalizable

conclusion as to how and what parents see as their role in their children's education. Just as developmental scientists have debated the age old question of whether "nature" or "nurture" creates the individual, research demonstrates that a combination of numerous societal and genetic factors combine in each parent. This is particularly true of parents' beliefs and practices regarding their children's education. Clearly, many factors are included in the equation that creates the sum of what parents see as their educational role.

What then, are those many determining factors? Research findings have provided a variety of answers to this question. Stoner and Angell (2006) contend that one of the most significant determinants of parental roles is their relationship with, and trust in, their children's educational professionals. Hoover-Dempsey et al. (2005) explain that parents' roles and involvement are determined by at least three categories of considerations: (a) parental motivational beliefs, (b) invitations, and (c) parents' life contexts. As discussed in the previous section, research also suggests that income, culture, and educational attainment are equally important in determining the role construction of parents (Green et al., 2007).

Before discussing individual parental role influences, it is important to note that parents often do not see themselves as functioning in a singular role, but in multiple educational roles (Epstein, 2001; Stoner & Angell, 2006). Stoner and Angell found that parents of students with special needs generally identified and operated in the separate yet connected roles of negotiator, monitor, supporter, and advocate. Epstein explains that parents should, and do, operate in a variety of educational roles both at home and in the school. These roles range from parenting at home to decision making in the school. Furthermore, Mowder et al. (1995) found that parents did not find all roles to be equally

important, nor were they stable across children's development. That is, as children grew older, the importance of some roles decreased while the importance of others increased.

In this review, I will examine five factors that the research suggests to have the greatest impact on how and what parents' see as their role in education. These factors are (a) parents' beliefs about child development and the role of parents, (b) parents' sense of self-efficacy, (c) parents' life contexts, (d) social and cultural influences, and (e) parental styles. Not surprisingly, the factors that influence parents' views about their roles in education are similar to those that influence parents' actual participation as reviewed in the first section. Due to the theoretical nature of this material, in this section, I review individual studies as well as discuss the pertinent theories.

Parents' Beliefs and Parent Roles

Child Development

Social Learning Theory

How do parents develop their beliefs regarding child development? Research suggests that beliefs about effective parenting and child development grow and change over the course of an individual's life (Green et al., 2007). Although most parents have little formal parental training, much of what they know and believe has come through their personal observations and social interactions. *Social Learning Theory* explains child and human development as a function of societal interactions. Social learning theory postulates that children observe and incorporate behaviors and attitudes through constant and ongoing social interactions (Powell & Cassidy, 2007). Social learning theory further postulates that children will do their most significant learning from those relationships

they see as most desirable and significant (Driscoll, 2006). According to social learning theory, therefore, family practices and beliefs have a deep and lasting impact on children.

How does social learning theory apply to the development of parents' educational beliefs? Powell and Cassidy (2007) explain that social learning functions not only in the acquiring of understanding and knowledge but also in the future expectations of children. Caplan et al. (1992) found that children who participate in positive educational behavior and observe their subsequent positive outcomes learn to value the observed behavior and to expect similar positive outcomes. Exposure to these educational behaviors and outcomes becomes a seedbed for future beliefs and practices as the child moves from the adolescent realm to adulthood and parenting.

Social learning theory further postulates that parents' beliefs regarding their roles and responsibilities can be shaped and manipulated through their social interactions with significant others. Hoover-Dempsey and Sandler (1997) found that invitations for involvement from important key others (teachers, administrators, and children) are often primary motivators of parents' decisions to become involved. Dauber and Epstein (1989) reported that teacher invitations and school programs developed to encourage involvement were the strongest predictors of home-based and school-based involvement in the elementary and middle schools they studied. Children's invitations have been found to be particularly powerful because they draw on the parent's general wishes to respond to children's needs and parents' desire to see their children develop and succeed (Hoover-Dempsey et al., 2005) Additionally, studies show that when teachers offer recommendations about parental help with learning in specific areas, parents' beliefs

regarding the importance of their help in those areas increased (Drummond & Stipek, 2004).

Parent Role Development Model (PRDM)

The Parent Role Development Model (PRDM) created by Mowder (1993), incorporates social learning theory to explain that throughout the childhood and adolescent years, each individual gradually develops beliefs about what it means to be a parent. These beliefs, however, are not completely persistent, but change, develop, and grow in complexity based on life and relationship experiences. Significant changes in beliefs regarding parenting responsibilities and practices may also occur as they work with children of their own and deal with differences among individual children. This model is supported by previous research such as that of MacPhee (1983). In surveying 256 mothers of 6-month-old children, McPhee found that this diverse group of mothers used their own observations, information obtained from books, advice from their family doctors, and the experiences of those in their social networks to establish beliefs regarding child development and appropriate parenting practices.

Role Construction

How do parents' beliefs develop into behaviors? Social learning theory explains that experience over time helps determine parents' beliefs about parenting and child development. In turn, these beliefs play a critical part in the construction of parental roles. Role construction, as defined by Hoover-Dempsey et al. (2005), is the development of parents' beliefs about what they should *do* in relation to their children's education. Hoover-Dempsey et al. explain that role construction is influenced primarily by three

factors: (a) parents' beliefs about how children develop, (b) parents' beliefs about what parents should do to rear their children effectively, and (c) parents' beliefs related to what parents should do at home to help children succeed in school. Social learning theory postulates that many of these beliefs are developed as a part of life experiences and social interactions.

A significant contribution of the PRDM in understanding parents' role construction is the elucidation of six general parenting roles. Mowder (1993) contends that parents' see their roles as including (a) bonding, (b) discipline, (c) education, (d) general protection and welfare, (e) responsivity, and (f) sensitivity toward their child. Mowder et al. (1995) used the Parent Role Questionnaire (PRQ) to survey 1,109 parents/guardians regarding the roles described in the PRDM. The PRQ combines open-ended responses and Likert-type scaled questions where a value of "1" represents "very important." Not surprisingly, the mean values for the six PRDM parenting roles ranged from 1.05 to 1.15, signifying that parents generally viewed each of these as a parenting role and as "very important."

Another significant finding from this study was the variation in the ranking of role importance across developmental stages. From 0-2 years of age, parents' ranked the importance of their educational role ranked fifth of the six roles, significantly behind all but the role of disciplinarian. During the elementary years, however, parents ranked the importance of the educational role as third of the six roles, nearly equal to the first and second ranked roles. Also of interest was the difference between male and female; males tended to rate the importance of their educational role higher than females, with education ranking first in importance during a child's adolescent years among fathers.

The variation in parents' view of their roles across development stages is substantiated in the research of Drummond and Stipek (2004). In individual telephone interviews, an ethnically diverse sample of parents (*N*=234) rated the importance of helping their second-grade and third-grade children in reading, math, and homework and of knowing what their children were learning. Parents also answered open-ended questions about the type of educational help they deemed appropriate. Teachers were subsequently ask to rank each student's reading and math skills. From the data collected, Drummond and Stipek found that even in the space of one grade, parents' beliefs about their role in their children's education changed significantly. For example, parents of second graders tended to rate the importance of helping higher than did parents of third graders. Parents also viewed their roles differently according to the academic subject. Parents perceived helping with reading as more important than helping with math. As reported in other research, this finding may be influenced by parents' own sense of self-efficacy regarding particular school subjects, as well as the value they place on children learning those subjects.

In an additional study on the perceived roles of parents in their children's education, Ingram, Wolfe, and Lieberman (2007) examined parental roles in the context of Epstein's (2001) 6 typologies of parental involvement: parenting, communicating, volunteering, learning at home, decision making in the schools, and collaborating with the community. Via open-ended questions, 49% of the 220 respondents defined the educational role of a parent as someone who works with the teacher and continues teacher-selected learning activities at home. These responses correlate with Epstein's Type IV (Learning at Home). A majority of the other responses correlated with Type I

(Parenting). Additionally, parents mentioned (a) maintaining high expectations, (b) teaching the importance of a good education, and (c) providing the best education possible, as their primary educational roles. These findings suggest that even though researchers, administrators, and teachers see opportunities for the expansion of parental roles in education, most parents continue to focus on the roles of basic parenting and providing educational help in the home.

Why is role construction important? It is evident from this research that role construction is a significant determinant in parental practices. In his research on parents' beliefs and social networks, Sheldon (2002) found that the role construction of parents from urban and suburban schools predicted parents' home-based and school-based involvement activities. Grolnick, Benjet, Kurowski, and Apostoleris (1997) also reported a significant link between parents' role construction and their participation in educationally enriching activities with their children.

Combined, these studies provide further evidence that parents see their roles in their children's education as malleable and changing over time and across development stages. Therefore, children's age and grade become significant factors in determining parents' educational roles. Finally, in considering the impact of life experiences on parenting beliefs, one must realize that the details of an individual's culture and society play a key role in determining life experiences and subsequent beliefs and practices. The influence of cultural background in regards to parental roles has received much attention (Chrispeels & Rivero, 2001; Green et al., 2007); therefore, the effects of culture will be discussed individually later in this paper.

Self-Efficacy and Parents' Roles

Hoover-Dempsey et al. (2005) describe self-efficacy as a belief in one's ability to act in ways that will produce desired outcomes. Parents who have a high sense of self-efficacy for facilitating their children's education believe that their participation will lead to their desired objectives. For parents, self-efficacy plays an important part in determining their educational roles and involvement. Parents who have a high sense of self-efficacy are not only highly involved in their children's education, but they are able to persist in the face of challenges and continue to work toward desired outcomes. (Hoover-Dempsey, Bassler, & Brissie, 1992).

Parents' sense of self-efficacy is created in large part by their beliefs regarding their own capabilities. In turn, this sense of self-efficacy becomes a factor in the parents' role construction. Parents with a high sense of self-efficacy will tend to be more involved and see themselves in the role of parent-educator. Parents with low educational self-efficacy tend to view their role as one of supporting what students are learning at school (Grolnick, Kurowski, Dunlap, & Hevey, 2000). Self-efficacy, therefore, becomes a determining factor in parents' role selection. For example, a parent who is not confident in his English language abilities may not view his role as one of teaching English, but as a supporter of the English education provided at school. To the contrary, a parent who is confident in her math abilities may see her role as a Parent-Teacher in that particular subject. Grolnick et al. explain that as children progress from elementary school through high school, their homework begins to supersede parents' knowledge, resulting in less parental involvement and a subsequent shift in parental role construction.

Grolnick et al. (1997) combined parental context features with a multidimensional conceptualization of parental involvement to examine factors relating to parents' educational involvement. Their sample population included 209 mothers, their third-grade through fifth-grade children, and 28 teachers. Their correlational statistics revealed that parents' perceptions of self-efficacy were related to (a) higher parental involvement at home and school, (b) increased cognitive and intellectual participation with children, and (c) the personal monitoring of children's progress. Hoover-Dempsey et al. (1992) also reported positive correlations between parents' sense of educational self-efficacy and their involvement behaviors at home. Thus we see that when parents' feel a sense of self-efficacy, they take an active role in their children's education. Parents who have a low sense of efficacy, either due to lack of personal abilities or low confidence in the value of the involvement, will take a less active educational role.

Life Contexts and Parents' Roles

Socioeconomic Status

Do economic considerations correlate with parents' view of their educational roles? The relation between socioeconomic status and parents' view of their educational roles in terms of involvement has been well documented. Generally, studies have shown that parents' view their roles differently as their income and education levels increase (Dearing et al., 2006; Jeynes, 2007; Vaden-Kiernan & McManus, 2005). This difference in role perception is manifest through increased levels of parental involvement, both at school and at home. For example, Vaden-Kiernan and McManus, using data from the National Household Educational Survey of 2003, found that in nearly every aspect of parental involvement, higher parental levels of education predicted higher levels of

involvement. Similar results have been found for family income levels (Lareau, 1987). Drummond and Stipek (2004) concluded that low-income parents value education as a route to economic and social mobility but that their actual involvement often falls short of their beliefs. There appear to be many causes for this correlation. It is possible that regardless of income, parents' view their educational roles in a similar fashion, yet lower income parents may lack the time and resources to match their actual behavior to their beliefs. In light of the sensitive nature of SES research and our limited ability to change the SES of participants, Hoover-Dempsey et al. (2005) recommend that researchers approach the issue of SES in terms of parental and familial resources.

In a study of familial resources among lower income families, Weiss et al. (2003) collected both quantitative and qualitative data to examine the impact of mothers working and attending school on their involvement in their children's education. The data revealed that mothers who worked or attended school full-time or part-time assumed parental roles in their child's education based on individual circumstance. Weiss et al. concluded that these decisions in parental roles were often due to inflexible work schedules and long or unpredictable working hours. Unexpectedly, the data revealed that mothers who worked or attended school on a part-time basis were more involved than other mothers. The authors found that these mothers had developed unique and ingenious ways to remain involved in their children's education in spite of their absence from the home. The authors point to four inventive strategies that these mothers found for staying involved: (a) promoting a support network, (b) using the workplace as a home base, (c) garnering resources through work, and (d) conquering time and space challenges. This involvement was facilitated by children-friendly work environments and flexible work schedules.

Weiss et al. conclude that the ever increasing number of working mothers, combined with the importance of mothers' parental educational roles, demands a reexamination of policies regarding children in the workplace and schedule flexibility.

In addition to workplace concerns, the roles that lower SES parents choose may differ because of their lack of social networks through which they might help their children academically. Horvat, Weininger, and Lareau (2003) collected ethnographic data primarily from 88 third-grade and fourth-grade children and their families. They found that the school-related knowledge of lower SES parents' is often influenced by less schooling and less access to additional family or professional assistance. They also found that middle-class parents tended to react collectively, in contrast to working-class and poor parents. Furthermore, middle-class parents were also able to utilize contacts with professionals to mobilize information, expertise, and authority to contest the judgments of school officials. Similarly, Baker and Stevenson (1986) found that mothers of high SES families knew the educational system better and therefore could adopt the role of assisting their children in its navigation.

In a comparison of two first-grade classrooms from middle-class and lower-income schools, Lareau (1987) found that although teachers had similar expectations for each class, parents in the low-income community were less familiar with school curriculum, did not attend as many school events, and engaged in less educational experiences and teaching at home. These parents explained that they had less time and flexibility for their parental roles in regards to the schools involvement expectations. In similar studies, low-income parents reported a lack of confidence about school matters

and assumed the role of a teacher supporter--deferring to the teachers expertise (Horvat et al., 2003; Lareau & Shumar, 1996).

These findings indicate the possibility that parents of differing SES levels may, of necessity, construct their educational roles differently. Parents in low-SES situations may be forced to choose educational roles that are home-based or they may be limited to involvement that matches their knowledge levels and educational experience. Even from this brief examination, it is clear that socioeconomic status can be a significant factor in parents' role determination. However, Dearing et al. (2006) found that when low-SES parents were able to maintain high levels of parental involvement and an active role in education, the negative association of low-SES was effectively neutralized.

Time and Energy Considerations

Parental time and energy considerations are often closely associated with socio-economic status. In an increasingly busy and industrialized world, many parents are finding it more difficult to meet the time and energy demands of their children's education. Weiss et al. (2003) explain that the increasing demands of work life, particularly for single mothers, are substantially complicating parents' educational roles in these families. With the increase in both single mothers and dual working parents, parents are finding it more difficult to meet their children's and schools' expectations.

In addition to occupational considerations, other familial factors influence the time and energy available to parents as they determine their educational roles. One factor that has been of interest is family size. Caplan et al. (1992) note that family size has long been regarded as one of the most reliable predictors of students' negative achievement. The vast majority of studies on the topic display an inverse correlation between number

of siblings and student achievement. These results seem reasonable considering that parents' limited time must be shared among more numerous siblings. Caplan et al. explain, however, that like single and working mothers, some cultures have found ways of negating these effects. They found that among Indochinese refugee families, older siblings frequently engaged with younger siblings in educational activities normally viewed as a parent role. Hoover-Dempsey et al. (2005) also mention that with increases in life expectancy, parents are often required to engage in elderly care as well as child care. Hence, time and energy considerations must be added to the growing list of factors that combine to determine parents' educational roles.

One additional life context that must be included in a discussion of factors that determine parental roles is that of family structure. In the landmark study conducted by the Department of Education, and reported by Nord and West (2001), the authors concluded that family type was a substantial factor in parental roles for two-parent biological families, single-parent families, and stepparent families. Most significant were the findings that children from non-two-biological parent families tend to do less well in school and that parental involvement of biological parents differed across family types—with the involvement of stepparents generally lower than that of biological parents.

The authors give many possible reasons for these findings. Among them are explanations mentioned earlier such as the increase of siblings in blended families, the decrease in family resources, and the necessity of single parents to carry both work and the family responsibilities alone. Nord and West (2001) also found that stepparents often see their roles in the lives of their stepchildren differently than do the biological parents. Likewise, they found that the roles of biological parents changed as they remarried. For

example, biological fathers in stepmother families are more likely to be highly involved in their children's schools than biological fathers in two-biological families. The authors postulate that the difference may be due to the biological father's in stepfamilies sense that he must fulfill the roles of both biological parents. Contrary to these findings, mothers in stepfather families displayed lower levels of involvement than did single mothers and mothers in two-biological parent families. The authors suggest that this is possibly due to the added pressures and responsibilities often experienced in remarriage.

Regardless of the causes, research shows that family type is a major factor in the educational roles assumed by parents. In light of the fact that approximately half of the students in the United States come from family structures other than two-biological parents, the importance of considering family structure as a life context becomes clear.

Cultural Influences and Parents' Roles

Impact of Culture on Parental Roles

As I discussed in Section I, the importance of culture on the construction of parental roles in education cannot be underestimated. In lieu of attempting to stereotype parents by culture, my intent is to show that indeed both the culture of the parent and the culture of the student are significant in determining the way parents engage in their children's education. To accomplish this task, I will explore two studies that inform this topic particularly well. Although the first study, Caplan et al. (1992), was reviewed in Section I regarding parental involvement activities, separate and important findings regarding the impact of culture on parental beliefs revealed uniquely through this study merit its reexamination.

The work of Caplan et al. (1992) with Indochinese refugees answers many questions regarding the impact of culture and the unusual success of Southeast Asian immigrants in the United States' public school system. Caplan et al. collected data on the background, home-life, economic status, and demography of 6,750 Indochinese refugees living in five urban areas in the United States. They found that a majority of these persons knew no English and arrived in the United States with little more than the clothes they wore. From this group, they chose a random sample of 200 nuclear families and their 536 school-age children. Twenty-seven percent of the families had four or more children and had been in the U.S. for an average of three and a half years. All of the children attended schools in low-income, metropolitan areas.

From this survey and other data, Caplan et al. (1992) concluded that educational beliefs regarding the role of parents in education are key to students' educational success. The authors note that in the Indochinese culture, family is the central institution, particularly for the passing of societal values from one generation to the next. As they put it, the learning of one's culture does not happen in a vacuum. The authors found that these Indochinese refugees had an unusual sense of family identity and family efficacy. Caplan et al. noted that the children and parents rated various life and educational values nearly the same. For example, when asked what they believed accounted for their academic success, both parents' and students rated "love of learning" highest. Likewise, parents and students perceived learning as normal, valuable, and fun. Furthermore, they rated the seeking of excitement and fun as very low. When examined through a social learning lens, it is easy to trace the transmission of educational values and beliefs through generations.

Caplan et al. (1992) also found that the attitudes these parents embrace have proven to be particularly efficacious. For example, Indochinese parents tend to focus on effort as opposed to ability. The parents set standards for the evening hours and then facilitate their children's studies by assuming responsibility for chores and other practical considerations so their children can engage in homework. The average high school aged student in this sample completed 3 hours and 10 minutes of homework per night, more than twice the average for other U.S. students. Caplan et al. reported that parents viewed education as the key to social acceptance and economic success, and that this view accounted for such strong parental and student commitment.

Lest one assume that the reason for the unusual success of these students can be attributed to genetics or ethnicity, Caplan et al. (1993) noted that not all of the refugee families had continued in their unique educational heritage. Children from families where parents did not read aloud had grade point averages equal to those of their nonrefugee peers. Likewise, families that rated seeking material possession and fun as high priorities also had children who performed at average or below average levels.

The research conducted by Okagaki and Sternberg (1993) is equally valuable in demonstrating the importance of culture in parents' role construction. Building on prior research (Sternberg, 1985), Okagaki and Sternberg argue that cultures invent different notions of intelligence in context. The authors explain that cultural differences can be seen in parents' beliefs regarding the ages at which children can be expected to perform certain tasks, in parents' beliefs about what they can do to affect their children's development, and in the relative importance of learning specific subjects, such as math.

For the present study, Okagaki and Sternberg (1993) sampled kindergarten, first-grade, and second-grade children from nine public schools in two neighboring school districts in San Jose, California. A total of 675 children were tested in their schools; of these children, 498 parents completed the parental beliefs questionnaire. A subsample was selected for analysis (n=359) that included all of the parents in the six largest cultural groups, ranging from n=37, for Anglo-American, to n=90, for Mexican immigrant. Either father or mother could complete the questionnaire, with the majority of mothers (except for Cambodian immigrants) choosing to do so. The parents were asked to respond to three categories of items: (a) child-rearing belief scales, (b) conceptions of intelligence scales, and (c) educational goals.

First, Okagaki and Sternberg (1993) looked for cultural differences regarding parenting beliefs, parenting styles, and desired outcomes. In sum, parents differed in the emphasis they placed on autonomy and conformity, as these constructs had been defined in the questionnaire. Both Anglo-American and Mexican-American parents gave higher importance ratings to autonomous behavior than to conforming behavior items. In contrast, for immigrant parents, encouraging conformity to external standards had higher importance ratings. In fact, for all immigrant parents, the conformity scale received higher ratings than any other scale.

Second, the authors examined cultural differences in the definition of an "intelligent child." The major difference was found in the cognitive versus noncognitive items. For all immigrant parents, the noncognitive items ranked equal in importance to the cognitive items. Anglo-American parents gave higher importance ratings to cognitive attributes than to noncognitive ones. These findings coincide with those reviewed by

Drummond and Stipek (2004). They note that studies have found culture to be instrumental in determining educational definitions. For example, Latino parents tend to define education more broadly than many teachers do, extending education to areas of social and moral development.

Finally, Okagaki and Sternberg (1993) examined the educational goals of these parents. They found that social goals received higher importance ratings on average than academic goals for Filipino and Vietnamese parents. For all other parents, the average ratings between social and educational goals were equal. However, the importance of teaching socially conforming behavior, such as following directions and obeying rules, rated higher when children were in first and second grades. The main difference between cultural groups was found in the relative importance parents placed on independent thinking versus doing tasks neatly. Immigrant families valued doing things neatly as much as independent thinking, while American-born parents believed that independent thinking and creativity were much more important than neatness. This coincides with contemporary American culture which places a high value on independence and creativity.

In summary, these two studies taken together demonstrate that culture is significant in determining parents' educational beliefs and practices concerning their roles in educaiton. Culture can play a substantial role in parents' beliefs regarding fundamental variables such as what students should be learning in school, what should be taught at home, parents' educational obligations to their children, and how children's education is best assessed. As parents from various cultural backgrounds view the

processes and goals of education differently, they will select differing educational roles that best coincide with their particular beliefs.

Parenting Styles and Parents' Roles

Parents have differing beliefs not only on "what" educational roles they should assume, but exactly "how" those roles should be played out. Building on findings that parental involvement is positively linked to academic achievement, Pomerantz et al. (2007) reviewed research to determine if the *manner* or *style* of parental involvement is a factor in determining the *effectiveness* of parental involvement. These authors focused on four different "qualities" of involvement, namely, (a) autonomy support versus control, (b) process focus versus person focus, (c) positive affect versus negative affect, and (d) positive potential beliefs versus negative potential beliefs. Although little research has been conducted regarding the effects of parenting styles on parents' education roles, some correlation has been shown to exist between these areas. Acknowledging that fact, I will briefly describe and discuss each style and possible implications for determining parents' educational roles.

Autonomy Support versus Control

Autonomy support is described as allowing children to explore their own environment, initiate their own learning experiences and behavior, and actively engage in solving their own problems. In contrast, *controlling behavior* involves the exertion of pressure by parents to move toward or meet predetermined educational goals (Pomerantz et al., 2007). Grolnick, Gurland, DeCourcey, and Jacob (2002) had children and their mothers work on tasks in a laboratory setting. They found that the more autonomy

supportive and less controlling mothers were, the better their children performed on the tasks. This coincides with the research of Hess and McDevitt, (1984) who examined European-American families from a range of socioeconomic backgrounds and found that the children of mothers who used particularly controlling behavior demonstrated poor school readiness 1 or 2 years later, and poor school performance even 8 years later.

How does an autonomy supportive style versus controlling behavior help determine parents' roles in their children's education? From their definitions alone, it is reasonable to conclude that adoption of one of these styles over the other will in part determine the type and frequency of educational roles in which parents engage. For example, parents who practice autonomy support approach homework very differently than the controlling parent, particularly in the face of challenging problems. Likewise, in the selection of school courses and fields of study, the controlling parent assumes a dominant role in the selection process, whereas the autonomous support parent assists by helping the child see the consequences of various choices. These differences may be even easier to detect when children are young and there exists a tendency among parents to provide very little autonomy for their child (Jeynes, 2005).

Process Focus versus Person Focus

Process focused parents highlight the process of education and the importance and pleasure of effort and learning. *Person focus* parents emphasize the performance, innate ability, and perceived intelligence of the child. Mueller and Dweck (1998) had an unknown adult give elementary school students from diverse backgrounds either process or person focused feedback in a laboratory setting. Students receiving the process focused feedback were more likely to believe that their abilities were changeable, to adopt

mastery goals, and to view failure as a lack of effort as opposed to diminished ability—behaviors found to be positively associated with academic success. Mueller and Dweck also found that process focus parenting leads children to greater intrinsic motivation.

The importance of these parenting styles as a factor in determining parents' educational roles is quite evident. Process focused parents tend to select roles and involvement that highlight the importance and enjoyment of learning. They see themselves as a facilitator in their child's development. Person focused parents chose to be involved in activities that highlight a students' superior performance or intelligence. Pomerantz et al. (2007) also note that these parents often feel that their own self-worth is determined by the performance of their child.

Positive versus Negative Affect

A parent who practices *positive affect* is described as one who shows encouragement and empathy to children in the context of educational endeavors. A parent showing *negative affect* often displays emotions of frustration, irritation, and even hostility (Pomerantz et al., 2007). Even parents who attempt to be positive may, due to external pressures or frustrations, begin to exhibit negative attitudes toward the child and involvement. In questioning mothers about their attitudes and relationships with their kindergarten children, Simpkins et al. (2006) found that the more mothers characterized their relationships as warm, the greater the effects of their involvement on their children's achievement.

Pomerantz et al. (2007) suggest that it may be easier for parents to consistently experience positive affect when participating in school-based activities, such as talking with teachers or volunteering in the classroom. Parents may frequently experience

negative affect on the home-front due to the negative feelings children themselves experience around academic activities at home, such as frustrations with homework. In the selection of parental roles and involvement, parents who are able to maintain positive attitudes during at-home involvement may be more likely to seek active educational roles in the home, while parents experiencing negative affect at home may select educational roles at school and avoid involvement at home.

Positive versus Negative Beliefs about Children's Potential

Parents' beliefs about their children's potential are displayed through a variety of attitudes and behaviors. Studies on this topic have general focused on two areas: (a) parents' perceptions of their child's competence, and (b) expectations for children's performance (Pomerantz et al., 2007). Parents' positive or negative beliefs and expectations have been found to be highly correlated to students' academic achievement (Jeynes, 2005, 2007; Pomerantz et al., 2005; Seginer, 1983).

In summary, the parental styles adopted by parents can significantly influence the educational roles they assume. Research suggests that children benefit when parents support their educational pursuits while maintaining some degree of autonomy. Research further suggest children benefit when parents focus on the process of learning, maintain positive attitudes during parental involvement, and view their child's potential positively.

Conclusion

In this section, I have presented several factors that combine to play an important part in determining the educational roles in which parents' engage. First, parents' come to understand the role of a parent through a life-time of experiences. As explained by social

learning theory (Powell & Cassidy, 2007) and the Parent Role Development Model (Mowder, 1993), parents beliefs regarding parenting develop, grow, and change in complexity based on experiences from birth to the immediate present. Life contexts, such as socioeconomic status, time and energy considerations, and family structure add to parental role construction. As Jeynes (2005) notes, the life contexts of some parents may make it easier for them to actively participate in their children's education.

Equally important are the impacts of cultural and societal influences. As suggested by the studies of Caplan et al. (1992) and Okagaki and Sternberg (1993), parents and children are significantly influenced by the culture in which they live and participate. Beliefs regarding the very definitions and foundations of education are at least partially determined by the society and culture that help to shape the individual.

In 1969, Kohn presented three basic parenting principles for consideration. He concluded that (a) elements of parents' social context influence the goals and values parents have for their children, (b) these values will result in differences in parenting practices, and (c) differences in parenting behaviors ultimately will result in differences in child outcomes. The past 40 years of research on parental roles have somewhat substantiated Kohn's claims by revealing the power of life context, particularly economic, cultural, and familial, in determining parents' educational roles.

Ultimately, as explained in Kohn's second consideration, these beliefs lead to the parenting roles and practices in which parents engage. Those practices are subject to parents' abilities and sense of self-efficacy. Depending on their role construction and sense of self-efficacy, parents may choose to provide autonomy support or controlling behavior, they may be process or person focused, they might contribute positive or

negative affect, and hold positive or negative beliefs about their children's potential. Finally, as suggested by Kohn (1969) the roles and practices of parents add or detract from the academic success of their children.

Although it has not been possible to definitively state what parents see as their role in their children's education, the studies and theories considered in this review add clarity to the picture by examining many pieces of the parental puzzle. This research continues to support the claim that when parents are actively and efficaciously involved in their children's education, children's academic performance, as well as general well-being, improves (Henderson & Berla, 1994).

Section III: Parents' Educational Aspirations and Expectations

My objective in this section is to review and discuss literature specifically related to parental expectations and their impact on students' academic success. To accomplish this objective, I begin with an introduction and definition section followed by a review of some of the most significant findings regarding parental expectations. I next examine three theories that attempt to explain the causality of the correlation between parent expectation and student achievement. As with Sections I and II, I also examine how factors such as SES, ethnicity/culture, parents' education levels, and family structure influence parents' educational expectations. I conclude with a discussion on some of the limitations and challenges in parental expectations research.

Introducing and Defining Parental Expectations

The strong and positive correlation between parental expectations and academic achievement is one of the most consistent findings in the parental involvement literature.

Interest in the effects of parental expectations is very likely an outgrowth from the research on teacher expectations that was widely popular throughout the second half of the twentieth century. The motto that "students rise to their level of expectations" flowed from theories such as the "self-fulfilling prophecy" of Robert Merton. The premise of these theories is that the prediction somehow, directly or indirectly, causes itself to become true. Willis (1991) explained that holding high expectations has become conventional wisdom and the watchword for motivating students and raising achievement.

In a review of 11 major parental expectation studies ranging from 1964 to 1982, Seginer (1983) concluded that the empirical studies examined generally support the idea that families who have high expectations for their children produce high achieving students. Since that time, numerous studies have in fact reported correlations between parents' expectations and their children's behaviors. For example, Coleman (1988) found that students whose mothers expect their college attendance were half as likely to drop out between grades 10 and 12.

As a construct, parental expectations has generally been limited to one of two definitions: (a) parents' expectations/aspirations for their child's ultimate educational attainment, such as the completion of a college degree, or (b) parents' expectations for their child's current academic achievement, as measured by grades, tests, etc. (Seginer, 1983). Generally the terms aspirations and expectations are used interchangeably. A few studies, however, have differentiated between these terms by defining parents' expectations to mean what parents *believe their student will actually achieve*, as opposed

to aspirations—defined as what parents' *hope their student will achieve* (Goldenberg et al., 2001).

To measure parents' expectations, researchers frequently create dichotomous variables on Likert-type scales as part of a parent survey instrument. Sandefur et al. (2006) used this method by asking parents how far they thought their child would go in school on a scale ranging from a high school diploma to earning a college degree. To examine parents' expectations for current academic achievement (grades and cognitive performance), similar scales have been created (Seginer, 1983).

Correlational Studies

Fan (2001) conducted a latent growth curve analysis on data from the first three waves of the National Educational Longitudinal Study NELS:88 (sample sizes ranging from 10,000 to 10,5000--based on the specific research question) to examine the correlation between various parental involvement activities and parental background features and academic achievement. Parental aspirations were measured by asking parents how far they thought their children would go in school. Academic growth was measured by achievement tests administered in four subject areas each of the 3 sampling years. From the latent growth curve analysis, Fan reported that parents' educational aspiration for their children stood out as having the largest and most consistent correlation to students' academic growth across all types of student and parent data. Furthermore, Fan found these results to persist over and above the effect of SES.

In a study that utilized four waves of the NELS:88 data (N=13,120), Sandefur et al. (2006) also found strong correlations between parents' post-secondary educational expectations for their children and student's actual enrollment in postsecondary

education. In particular, the findings of Sandefur et al. demonstrate the correlation between maintaining and communicating high parental expectations and students' educational attainment. The authors found that educational discussions (a common form of transmitting expectations to children) accounted for the largest difference in students' postsecondary enrollment. They also found that children whose parents expected them to earn a 4-year degree were 12% more likely to pursue a 4-year degree than children whose parents merely expected them to complete high school. Combined, these two factors demonstrated an important role in whether or not students enroll in a 4-year college or university. Sandefur et al. concluded that a student whose parents have high expectations, frequently communicate those expectations, and attend school events, is 50% more likely to enroll in 4-year postsecondary education than a student whose parents do none of those things.

In an examination of various parental involvement issues, Gill and Reynolds (1996) surveyed the parents of 745 boys and girls asking how far they thought their children would go in school. Students were then asked on a 4-point Likert scale how far they thought their parents expected them to go in school. As they predicted, Gill and Reynolds (1996) found that parent expectations for their children's educational success had the highest correlations with the child outcome at (r=.27) for reading and (r=.33) for math among sixth-grade students. Their results also indicted that parent expectations added significant variance to reading and math achievement: 6.3% for math, and 3.7% for reading. They also found strong correlations between parents' expectations and students' perceived expectations. The authors conclude that these data support the view that parent

expectations and children's perceptions of those expectations correlate with children's success.

Phillips (1992) sampled 180 parents of ethnically diverse children from grades two through six to examine the relation between key parent involvement variables and academic achievement. Parental involvement was measured via survey that included questions regarding parents' expectations for their children's ultimate educational attainment. Parents were also asked to rate their short-term objective for their children in math, reading, critical thinking skills, and self-image. Achievement was measured by student scores on the Metropolitan Achievement Test 6 Math and Reading, which uses a pretest-posttest design. Similar to other studies, Phillips found a strong and consistent correlation between parents' expectations and student achievement. Data from Pearson correlation tests showed a significant correlation between parental involvement and both math (.32) and reading (.26). Data also revealed a strong correlation between parents' educational aspirations and the short-term goals they have for their children. In a regression analysis, Phillips found expectations to be a positively related predictor in each instance where it entered an equation. Furthermore, Phillips found that parent expectations were high and significantly related to all areas of achievement even in the residual analysis where few significant correlations were found.

Singh et al. (1995) used the base year sample (N=24,599) of the NLES:88 data to examine a latent-variables structural equation model for parental involvement activities. The authors found parents' aspiration for children's education to be the strongest predictor of academic achievement. Contrary to findings in other studies, their data suggested that parental aspirations had no direct correlation with parental participation in

school-related activities—signifying that higher aspirations do not necessarily translate into greater participation at school activities. Parental aspirations did, however, correlate significantly and directly with family communication about school (β=.287). The indirect correlation of parents' educational aspirations for their children were found to be moderate on home structure (β=.126) and small on participation (β =.069).

Jeynes (2005, 2007) reported that the subtle aspects of parental expectations had a greater correlation to educational outcomes than the more traditional parental involvement activities. In his meta-analysis of studies with parents' of urban elementary students, parent expectations had an effect size of .58--representing an effect size 20% greater than any other parental involvement type. The effect size was even larger among parents' of high school students at an unusually high .88 when using sophisticated controls and over 1.0 when sophisticated controls were not used. These results doubled the corollary effect size of any other parent involvement feature. Furthermore, these results remained consistent regardless of measurement instrument and child/parent background features. Fan and Chen (1999) also found that parents' aspiration and expectations for children's educational achievement had the strongest correlation with student's academic achievement at (r=.40). Again, this effect size doubled that of nearly every other parental involvement factor.

An Examination of Theories

The studies reviewed here, and numerous others (Lee & Bowen, 2006; Lippman et al., 2008; Phillipson & Phillipson, 2007) provide convincing evidence that a strong correlation exists between parental expectations and students' academic achievement. There is however, a considerable amount of confusion as to why this correlation exists.

Early in parental expectations research, Seginer (1983) cautioned that the correlations found between parental expectations and student achievement did not show causality and that more study must be done in this area. Some researchers, including Seginer, have suggested that the correlation between these two factors may be bidirectional. Unfortunately, research specifically designed to examine these questions has been minimal. Frequently, considerations of parental expectations are couched within a much broader study. Due to this model, many of the findings regarding parental expectations continue to be limited to the correlational findings that have been previously substantiated. Fortunately, some researchers have sought to tackle the fundamental question posed by Seginer 25 years ago; "Do parental expectations actually affect student achievement?"

The research on parental expectations has led to at least three theories regarding the relation between parental expectations and student achievement. Two of these theories assume that the correlational direction is one of parents' expectations leading to student achievement. The third theory suggests a reverse direction--student achievement leads to parents' expectations.

Theory #1: Expectations Transmission

The first causal theory is based on parents' transmission of their expectations to their children. Sandefur et al. (2006) explain that parents communicate their expectations to their children and that these expectations become the expectations of the children for themselves.

This theory has been supported by studies such as that of Trusty and Pirtle (1998). In their analysis of the 1992-1994 NELS:88 panel sample, Trusty and Pirtle identified

parents' expectations as one of five main factors influencing students' own educational expectations and aspirations. In their work on the transmission of parental goals to their children, Trusty and Pirtle conclude that their most obvious finding, and the most significant, is that the goal transmission process is very strong, and that agreement between the child and his or her parents' expectations is the norm rather than the exception.

Gill and Reynolds (1996) suggest that these expectations lead children to setting higher standards for themselves and to make greater demands on themselves. In sum, parents' expectations are transmitted to children who then apply themselves in their school work to a greater degree, leading to enhanced academic achievement.

Theory #2: Achievement Supportive Behaviors

The second causal theory stems from the idea that parents who have high expectations behave differently than other parents. Plainly said, parents' with high educational aspirations for their children engage in achievement supportive behaviors more than parents' with lower aspirations. Fan (2001) suggests this to be the case and notes that the large impact of parents' educational aspiration may be credited to much more than just expectation. Fan concludes that expectations by parents may lead parents to participate in a variety of educationally beneficial activities and behaviors during their child's life.

This theory was born from research documenting the correlation of teachers' expectations with their subsequent behaviors. Research findings demonstrated that teachers who held high expectations for their students, even when falsely manipulated, demonstrated more achievement-supportive behaviors towards those children than

towards children for whom they held low expectations (Coleman, 1988). Seginer (1983) uses this teacher expectations model to postulate that parents who have high expectations behave differently from those who do not. This theory is somewhat challenged by the findings of Singh et al. (1995), who concluded that parents' expectations were only minimally and indirectly related to their participation in school-based activities. Their study, however, did not consider correlations between expectations and parents' home-based parental involvement.

Theory #3: A Reverse Causality

The third theory is born from research examining the antecedents of parental expectations. This theory suggests that parental expectations are not the antecedent, but the consequence of student achievement. Seginer (1983) suggested early-on in the research that the correlation between parents' expectations and student achievement may prove to be bidirectional, or unidirectional but in the reverse direction. Recent studies have given additional credence to Seginer's original idea.

In a longitudinal study involving 81 Latino children and their immigrant parents, Goldenberg et al. (2001) examined what they considered to be a reformulation of the self-fulfilling prophesy extended to the immigrant Latino parents. Goldenberg et al. explain that in this reformulation, immigrant parents are said to develop low aspirations and expectations for their children's educational attainment because of hesitant attitudes and beliefs about formal education. As these low expectations are transmitted to the children, their motivation and aspirations are dampened and they fail to achieve their academic potential. For this study, parents' aspirations were defined as what parents' hoped their children would attain educationally. Parents' expectations were defined as what parents'

realistically expected their children to attain academically. Student participation for this study began in the kindergarten grade and concluded at the end of the fifth grade. Data was collected from students, their families, and teachers at least yearly with a smaller case study sample participating more extensively. From their cross-sectional correlation analysis, Goldenberg et al. reported three major findings: (a) parents' educational aspirations are high and invariant throughout the elementary years; however, parents' expectations fluctuate; (b) children's school performance influences parents' expectations, but expectations do not influence performance; and (c) immigrant Latino parents attribute high instrumental value to formal schooling.

As with any single research study, some caution must be taken in the interpretation of these findings. First, due to the homogeneous nature of the sample pool, the results may or may not be generalizable to the larger population. Second, factors other than students' academic achievement, such as parents' education level, may have influenced the decrease in parents' educational expectations for their children. The homogeneity of the sample population may have resulted in undetected trends experienced by the group majority. Finally, the trends found in this population may be the natural trends found among parents of all backgrounds and expectations. Even with these considerations, the findings of Goldenberg et al. (2001) strengthen the position of the third theory.

The Role of Students' Past Performance

The third theory receives additional strength from the correlation found between students' past and current performance (Goldenberg et al., 2001) Students' past performance also provides the most logical correlation with parents' future expectations.

Reason would dictate that if a child is performing well in school, his parents will expect him to continue to perform well, the inverse being true of poorly performing students. The research has generally supported this conclusion. Seginer (1983) found that parents' expectations appear to be both a cause and an effect of academic achievement. She explains that feedback from the child's school and parental knowledge of the child's abilities contribute to parents' future expectations, which in turn leads to higher achievement. Researchers also postulate that students' past performance is a factor in parents' choices regarding their involvement, their beliefs about students' abilities, and their aspirations for their children (Jeynes, 2005, 2007).

Prior to formal schooling, parents develop different measures and benchmarks for deciding what to expect from a child intellectually and academically. These benchmarks and standards seem to be prescribed by the parents' own background, their educational heritage, and their culture (Seginer, 1983). Due to the differences between cultural heritage and formal education institutions, discrepancies in expectations and past performance sometimes arise. Schmidt (2008) found that cultural background and personal circumstances sometimes cause parents to establish expectations much lower than their students' actual capabilities. Seginer contends that some parents are unfamiliar with school criteria, and that others simply reject the feedback they receive based on their own observations and home-based experiences.

In summary, regardless of which theory, or combination of theories, ultimately best describes the correlation between parental expectations and student achievement, we must learn more about what influences parental expectations and how they influence academic achievement. Research suggests that factors other than students' previous

achievement influence parental expectations. These parental background factors, not surprisingly, are similar to those found to influence parents' beliefs regarding their roles in education, and parents' choices regarding their educational involvement. Because this study examines how parents' expectations vary prior to the birth of the child according to parental background factors, an examination of these antecedents is most beneficial.

Antecedents of Parental Expectations

In Schmidt's (2008) brief of the 2008 Department of Education report entailing parental expectations (Lippman et al., 2008) he noted that some segments of society are much more likely than others to hold high expectations and aspirations for their children's future educational attainment. The research of Lippman et al. (2008) and others suggest that a variety of parental factors help to shape parents' educational expectations for their children. Among those factors identified in the research are: (a) family income level, (b) parents' education level, (c) parents' ethnicity and cultural background, and (d) household composition. These factors, briefly introduced in Chapter 1, are given a more thorough treatment in the following section.

Family Income Level

As evidenced in Sections I and II, the effects of income level on students' academic achievement have been heavily studied. Frequently, income level is included as a part of the socioeconomic status equation. Even when examined as an individual topic, income level has been shown to correlate with many aspects of student achievement (Lee & Bowen, 2006). Income level has also been shown to correlate with different aspects of parental involvement—including parental expectations. Almost without exception, the

correlation has been positive; the higher the income, the more the parents expected their child to succeed academically and to obtain advanced degrees. Lippman et al. (2008) used survey data from the *parents* of approximately 6,800 students in grades 6 through 12 to examine differences in parental expectations. They found that 83% of students from families with a household income greater than $75,000 had parents who expected them to finish college. In contrast, 70% of students from household incomes of $50,000-$75, 000 had parents who expected them to finish college, and only 56% of students from household of $25,000-$50,000 had parents who expected them to finish college.

Similar results have been found when income level is examined as part of a SES equation. Both Trusty and Pirtle (1998) and Sandefur et al. (2006) found that parental expectations increased as SES increased. Additionally, Trusty and Pirtle found that as SES increased, the agreement level between parents' and children's educational expectations increased. In essence, they found that as SES increased, the goal transmission process grew stronger. They concluded that economic and social resources may boost the expectations of higher SES adolescents and dampen the expectations of low SES adolescents. Sandefur et al. suggest that higher parental expectations among higher income parents may be due to the fact that higher income parents can invest more (time and money) in the education of their children than can low income parents.

Parents' Education Levels

Parents' level of education is another common factor often included in an overall SES equation model. Again, when studied as part of a SES equation, parental education levels are positively associated with parents' expectations for their children's academic achievement (Jeynes, 2007; Sandefur et al., 2006; Trusty & Pirtle, 1998). When

examined individually, the correlations are similar to those of income level. Lippman et al. (2008) found that a higher percentage of students whose parents had earned at least a bachelor's degree (88%) had parents who expected them to finish college. In contrast, students whose parents had completed less education (62% for parents who had some postsecondary education, and 44% both for parents who had graduated from high school or less) had significantly lower expectations.

Herrold and O'Donnell (2008), using data from the National Household Education Surveys Program of 2007, found very similar results. They found that 91% of parents who had earned graduate degrees expected their children to complete college or obtain a graduate degree. This number dropped to 50% for parents who had earned a high school diploma. Additionally, Herrold and O'Donnell found that the difference between those who intended to help pay for their children's college education was nearly as large as the difference in their expectations. For example, 94% of parents' who had earned graduate degrees planned on helping their children pay for college, compared to 72% for those who had earned a high school diploma. These findings coincide with the conclusions of Sandefur et al. (2006) and Trusty and Pirtle (1998) that parents' financial and social capital play a significant part in formulating their educational expectations for their children.

Parents' Ethnic and Cultural Backgrounds

Research findings demonstrate that parents' ethnic and cultural backgrounds contribute significantly to parents' educational involvement levels and choices (Caplan et al., 1992; Okagaki & Sternberg, 1993). A number of studies suggest that cultural differences also play a role in forming parents' educational expectations and aspirations

for their children. Lippman et al. (2008) found parents' expectations for their children to finish college varied widely by ethnicity. Eighty percent of Asian students had parents who expected them to finish college, compared to 66% of White students, and 65% of Black and Hispanic students. The authors also found that 72% of students whose parents did not use English as their primary language at home expected them to finish college compared to 65% whose parents mainly spoke English. Further, students whose parents were born outside of the United State were 13% more likely to expect their children to finish college than students whose parents were born inside the United States.

Herrold and O'Donnell (2008) found similar results using the PFI:2007 data. When parents were asked if they expected their children to finish college or earn a graduate degree, Asians and Pacific Islanders had the highest expectations (90%), followed by Whites (73%), Hispanics (67%), and Blacks (63%). As noted earlier, when asked if they planned to help pay for college, the White and Asian parents traded places on the continuum. The research of Phillipson and Phillipson (2007) suggests that culture may also help to form parents' beliefs regarding satisfactory academic behavior. They conclude that parents of Chinese cultures have higher expectations in terms of higher "satisfactory scores." In other words, even though Chinese parents might actually expect scores similar to those expected by other parents, scores deemed satisfactory by Chinese parents are much higher.

In a contrasting study, Fan (2001) found that once adjusted for SES, the degrees of parental involvement, including expectations, were comparable among the four major ethnic groups studied. Although these results may seem to demonstrate that cultural background has no effect on parents' involvement and expectations, one cannot overlook

the fact that SES may be partly determined by cultural background, particularly the parents' education level. In other words, a cultural heritage that places formal and advanced education as a priority will tend to increase the SES (both the education and income level) of families. Therefore, assuming that culture does not play a part in determining parental expectations and involvement levels by simply adjusting for SES may be misleading.

Household Composition

Studies suggest that household composition, defined by parent configuration and number of siblings in the home, may also contribute to parents' educational expectations. For example, Lippman et al. (2008) found that 69% of students from two-parent families had parents who expected them to finish college, compared to 58% from single-parent families, and 52% from other types of family arrangements. Jeynes (2007) concluded that two-biological-parent homes lend themselves to greater parental involvement than other situations. Likewise, Nord and West (2001) found that biological parents and stepparents viewed their parental roles differently.

Thompson et al. (1988) found that even though children in different household configurations do not begin school with any notable differences in ability levels, parents in mother-father households hold higher expectations for their children's reading performance than do parents in one-parent homes. This pattern holds for Black children and for White children alike. Thompson et al. point to differences in parental expectations as a major factor in the achievement gap between students from two-biological parent families and those from other household configurations. They suggest, along with other researchers, that single parents may have similar desires for their

children's academic attainment, but due to their own practical constraints (such as time and money) some single parents may hold lower academic expectations for their children.

Regarding family size, Caplan et al. (1992) reported that the vast majority of research on family size and academic achievement has found them to be negatively correlated (Thompson et al., 1988). They suggest that the differences may be rooted in the limited time and energy parents must divide among multiple children. The authors noted that one vivid exception to this finding is the high marks obtained by the Indochinese immigrants from large families they studied.

Limitations, Challenges, and Deficiencies

As I have already discussed, the most significant limitation and challenge facing parental expectation research is the lack of causal studies. Furthermore, those few studies that have sought to establish causality have provided mixed results (Goldenberg et al., 2001). Even though many policy makers have called for increases in parents' expectations, it may be that raising parents' expectations has no actual influence on student achievement.

A second limitation to parental expectations research is found in the selection of research participants. A majority of research that includes parental expectations is conducted well after children begin school. Due to the potentially confounding nature of previous student achievement, this data may be unreliable. Parents receive enormous amounts of feedback regarding their child's potential abilities even before their child enters formal schooling. Studies that measure parents' math expectations for their eighth grader may find examining students' previous achievement just as valid and valuable.

Conclusion

Research consistently finds parental expectations as the strongest predictor of academic success (Fan & Chen, 2001; Jeynes, 2005, 2007; Lee & Bowen 2001). Many studies, however, are correlational in nature, failing to show causality between the two factors. Research seeking to prove causality has produced a variety of theories regarding both causation and directionality. At least two theories posit that parents' expectations directly influence the academic growth of their children either through goal transmission or parental achievement supportive behaviors. A third theory suggests that parents' expectations do not influence students' academic achievement. This theory postulates that parents' expectations are the result of students' previous academic achievements. The answer as to which of these theories is correct remains unclear from current research findings.

Recent research also suggests that factors other than students' previous achievements influence parents' educational aspirations. These factors include but are not limited to: (a) family income level, (b) parents' education level, (c) parents' ethnicity and cultural background, and (d) household composition. Lippman et al. (2008) suggest that these parental background factors may play an important part in determining parents' ultimate educational expectations for their children.

Finally, as is evidenced in this review, more research must be conducted examining the antecedents of parental expectations and the possible causality of the parental expectation and academic achievement link. As long as the research regarding the correlation between parental expectations and academic achievement remains unclear,

we must question the wisdom and the productivity of policies intended to generate high educational expectations among parents.

CHAPTER 3

METHODS

Purpose of the Study and Research Questions

Studies have shown parental expectations to be strong predictors of a student's academic success. Previous studies conducted with parents' of older children have identified several variables that appear to influence parental expectations (Lippman et al., 2008). In this study, I examined parents' educational expectations prior to childbirth and how those expectations correlate to previously defined predictor variables. As previously addressed, expectant mothers were surveyed prior to childbirth to ensure that their expectations were not influenced by the child's previous intellectual or academic performance.

For this study, I followed a nonexperimental, quantitative research design. This design is intended to describe existing phenomena without manipulation or treatment, while exploring the degree to which two or more phenomena relate to one another (Drew et al., 2008). The independent variables in this study consisted of six parental background factors: (a) family income level, (b) parents' education level, (c) parents' culture, (d) marital status, (e) parents' age, and (f) number of children. The dependent or measurement (criterion) variable was "parental expectations" as measured by a written survey adapted from the PFI:2003 telephone survey instrument.

The knowledge obtained from this study adds to the existing parental expectations knowledge base in at least two fundamental ways: it (a) provides expectations data on a key and understudied population (pregnant women), and (b) provides expectations data for comparison with data previously obtained from parents' of older children. These comparisons shed additional light onto parents' initial expectations for their children, how those initial expectations correlate to parental background variables, and how parents' expectations change over time. In part, this comparison was accomplished by replicating as nearly as possible the measurement instrument and analysis procedures outlined by Lippman et al. (2008) in their statistical analysis report of the 2003 PFI data.

Overarching research questions for this study included the following:

1. How do expectant mothers' academic expectations of their unborn children vary as a function of age, income, educational background, marital status, number of children, and ethnicity?
2. Which variable or combinations of variables have the most predictive power for parental expectations and to what degree can they predict parental expectations?
3. Do all parents have set educational expectations prior to receiving feedback regarding the child's abilities and performance?

This chapter is divided into six sections: (a) participant selection, (b) participant description, (c) measurement instruments, (d) data collection, (e) data analysis, and (f) challenges and limitations.

Participant Selection

Participant selection for this study was guided by (a) the requirements to gather data on a previously unsampled population, and (b) the requirements to gather data for

comparison with the data collected in the PFI:2003 survey. Although there were some unique features to my sampling procedure, the participant sample and procedures of this study were as similar as possible to the participant sample and procedures of PFI sample. Even though the measurement instrument in this study was a written survey as opposed to the PFI telephone survey, the data collection and analysis was as comparable as possible. To clarify how I accomplished this task, I first describe the PFI sampling procedures, followed by a description of procedures I used to obtain my sample and how the two are compatible.

PFI Sampling Procedures

The PFI sample was selected using random digit dialing methods. The survey data were collected using computer-assisted telephone interviewing technology. To ensure that all subgroups were duly represented, NHES used a list-assisted, stratified sampling method. This led to sampling in underrepresented populations at an increased rate (nearly double) compared to normal random sampling (see National Household Education Surveys; Data File User's Manual, Volume 1, pg. 15)

The stratified list-assisted random sampling was followed by participant selection according to their fit or study eligibility, namely, (a) parent of school-aged children, and (b) willingness to participate in a rather lengthy and personal survey. Determining eligibility was accomplished through the use of a screener instrument which collected demographic and educational information from household members. The data were collected from a parent or guardian who was the most knowledgeable about a sampled child or youth, typically the mother of the child. The sample consisted of 12,400 students in kindergarten through 12th grade aged 20 or younger as of December 31, 2002.

Determining Sample Population

For reasons of accessibility, I limited the sample for this study to pregnant women in the state of Utah. Although the data from this sample is not be as generalizable as a national sample, the stratification of the sample, discussed later, aids in the data being valid for comparison to the PFI:2003 data. The reasons for sampling currently pregnant women have been amply described.

Determining Sample Size and Make-up

I considered several factors in determining the sample size. First, due to the variance within each of the predictor variables under study (age, ethnicity, socio-economic status, educational attainment, and family structure) the sample population for this study needed to be large enough and broad enough to include a valid representation for each variable and its subcategories. Tabachnick and Fidell (2006) recommend that when using multivariate statistics, the sample size of the smallest group should be equal to or larger than the total number of predictor variables. Using this recommendation, the smallest sample subcategory could contain no less than 5 participants.

Second, Gall, Gall, and Borg (2007) caution that a reasonable balance between sample size and the number of predictor variables be maintained. As a general rule, they suggest that the sample size be increased by at least 15 individuals for each variable that will be included in the multiple regression analysis. Under these guidelines, the sample needed to include a minimum of 75 participants.

A third consideration was determining whether the sampling should be completely random or stratified. Two determinant issues were (a) should the data set reflect the make-up of the PFI sample? and (b) what type of sampling is necessary to

obtain the required data? Initially I considered a stratified sample that would reflect the demographics (ethnicity, income, education, etc.) of the PFI sample. However, when I examined the PFI data set as a whole, the impossibility of duplicating the demographics of the PFI sample became obvious. For example, if I elected to stratify my local sample based on the ethnical percentages of the PFI national sample set, the chances that my sample would also exactly reflect the income percentages and family composition reported in the PFI data would be slim. The same is true if the stratification were based on income or any one of the predictor variables. To find a sample that matched the PFI stratification in each category would require sampling the same set—another impossibility.

Fortunately, matching the PFI data sample percentages is of little consequence due to the nature of the research questions, the criterion measure, and the data I hoped to obtain. Because I desired to measure the educational expectations of specified groups, it is not important whether that group is 30% or 75% of the entire sample population. It was important, however, that each subcategory contained enough participants to produce a valid statistical analysis. According to Tabachnick and Fidell (2006), each subcategory should contain a minimum of 5 participants. The challenge, therefore, was not one of matching percentages compared to the whole, but one of generating a sample that ensures sufficient participants in each category and subcategory.

Generating a Stratified Random Sample

A stratified random sample, such as the PFI:2003, creates a sample that reflects certain desired characteristics, such as ethnicity percentages or male and female ratios. In this study, the intent of stratification was to ensure a significantly valid representation of

each predictor variable and its subcategories. Due to the fact that the local population was extremely homogenous, stratification techniques were employed to actively seek participants among the underrepresented populations. This was done by obtaining participants from geographic locations where higher levels of ethnic, educational, and economic diversity have been previously established.

To ensure that the desired stratification was occurring throughout the data collection, a continuous frequency distribution was maintained as each survey was received. To accomplish this task, all demographic variables were entered into a frequency table designed to track the sample size for each variable and its subcategories. For example, participants were categorized according to four age subcategories: 18-21 years, 22-25 years, 26-29 years, and 30+years. As each survey was collected, the responses were added to each subcategory.

As I previously mentioned, Gall et al. (2007) suggest a total sample size of no less than 75 participants when dealing with 5 variables. However, due to the fact that many of the variables will contain up to 5 subcategories, each of which should have at least 5 participants, it was necessary to obtain a total sample size of 100.

Participant Description

Ethnicity and Country of Origin

When asked to report their own ethnicity, 68% of mothers responded that they were White, 20% as Hispanic, 6% as Biracial, 3% as Asian or Pacific Islander, 2% as African American, and 1% as American Indian (see Figure 1).

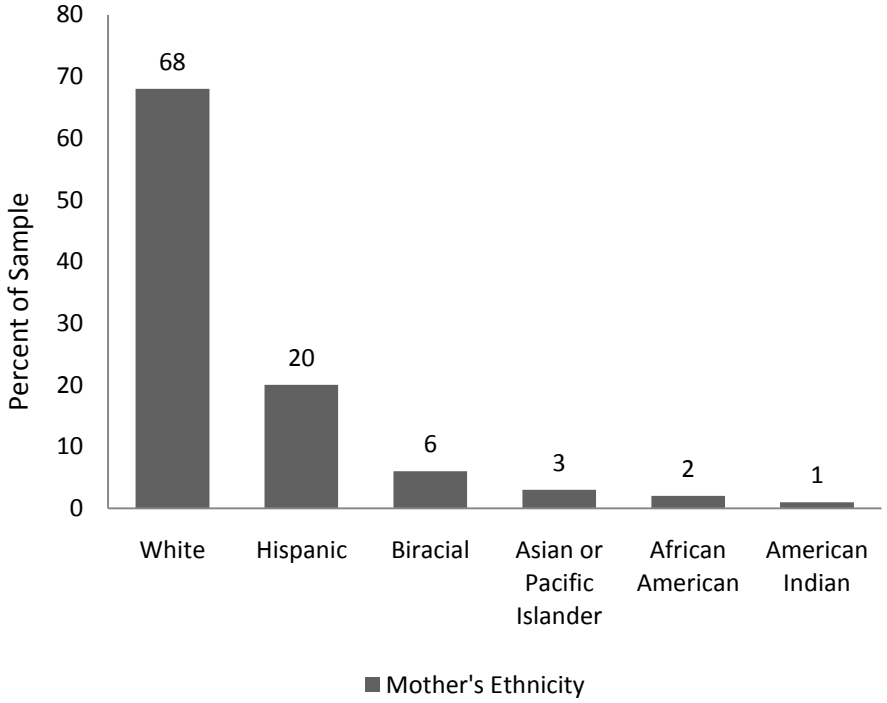

Figure 1. Mother's Ethnicity

Of the 100 participants, 81 were from born in the United States. Eleven participants were born in Mexico. Eight other countries were represented by 1 participant each: Argentina, Dominican Republic, El Salvador, Guatemala, Puerto Rico, Spain, Taiwan, and the United Kingdom (see Figure 2).

Only 89 participants reported their birth state. A majority of those born in the United States were from three states, Utah (39), California (16), and Arizona (5). Six of the 11 participants born in Mexico were from the state of Jalisco. The other 5 Mexican-born participants represented five different states (see Figure 3).

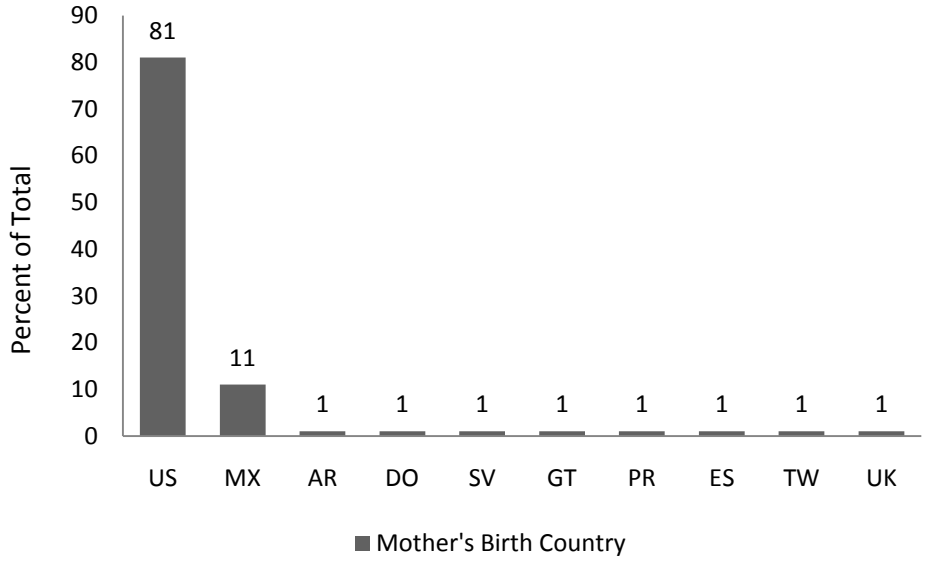

Figure 2. Mother's Birth Country

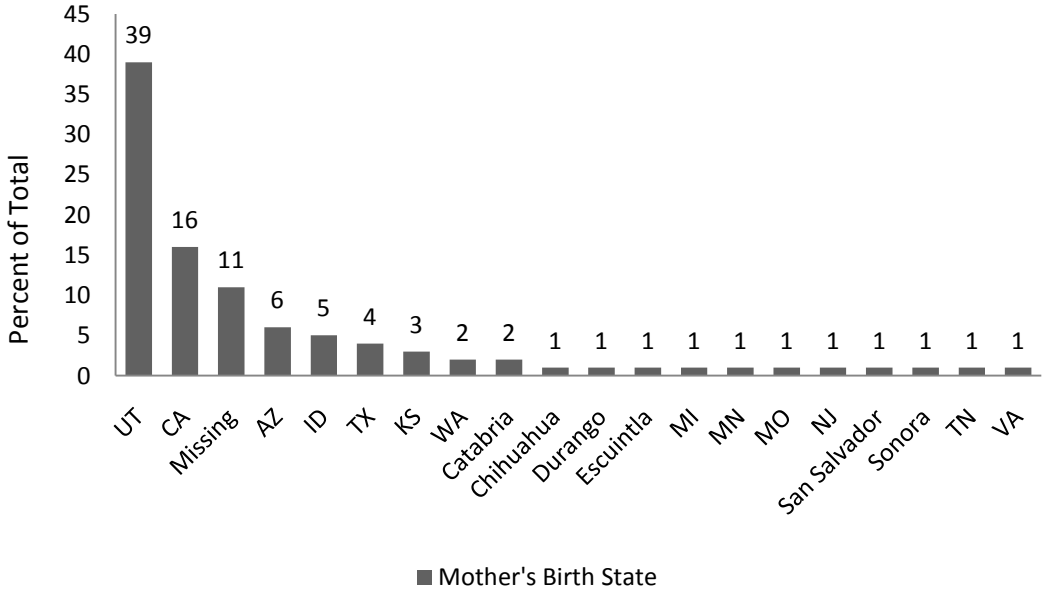

*Figure 3.*Mother's Birth State

Mother's Age

Participants were asked to report their birth month and year. Responses where then categorized into four age groups (18-21, 22-25, 26-29, 30+). The mean age for mothers was 26.3 years. Eighteen percent of participants (mothers-to-be) were 18-21 years of age, 31% of participants were 22-25 years of age, 28% of participants were 26-29 years of age, and 23% of participants reported being 30 years of age or older (see Figure 4).

Employment

Twenty-nine percent of participants worked 0-10 hours, 15% worked 11-20 hours, 13% worked 21- 30 hours, 25% worked 31-40 hours, and 7% worked 41 or more hours. Eleven percent of participants did not respond to this question. Note that many participants were also currently enrolled in some form of postsecondary education. This may have contributed to differences in hours worked among participants (see Figure 5).

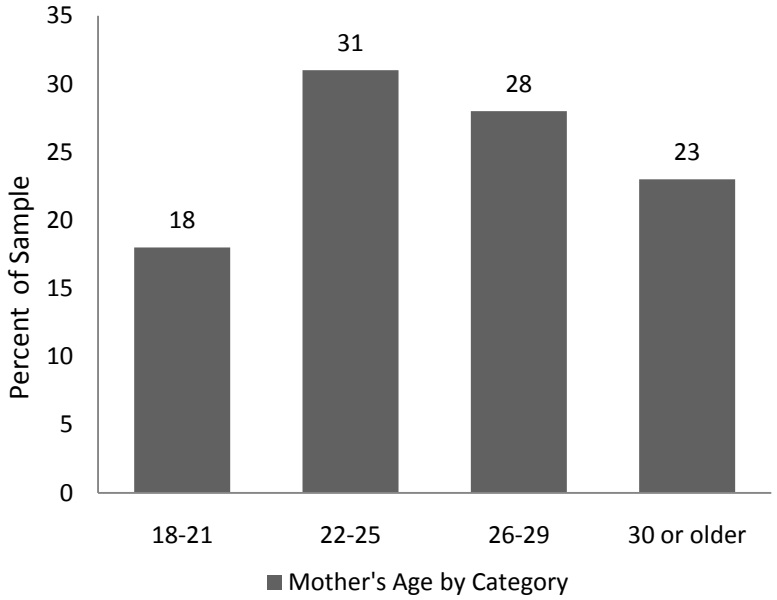

Figure 4. Mother's Age by Category

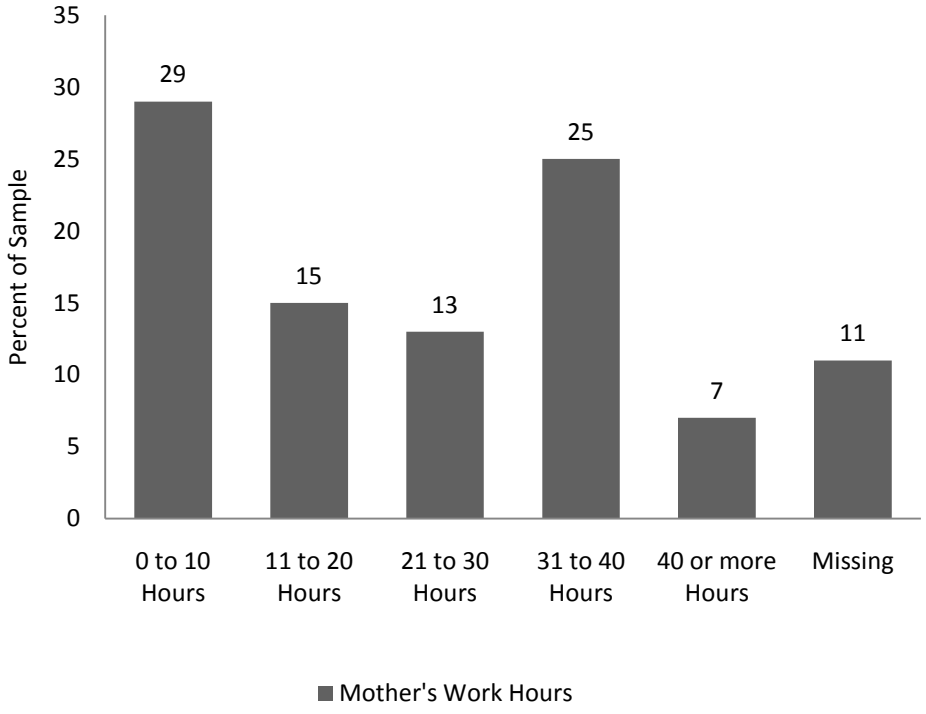

Figure 5. Mother's Work Hours

Household Income

Thirty-three percent of participants reported a total family income between $0 and $24,999. Thirty-nine percent of participants reported an income between $25,000 and $49,999. Nineteen percent of participants reported an income between $50,000 and %74,999, and 5% of participants reported a total family income of $75,000 or more. The limited number of participants in the $75,000 or more income bracket is likely due to the general youthfulness of participants. Four percent of participants did not respond to this question (see Figure 6).

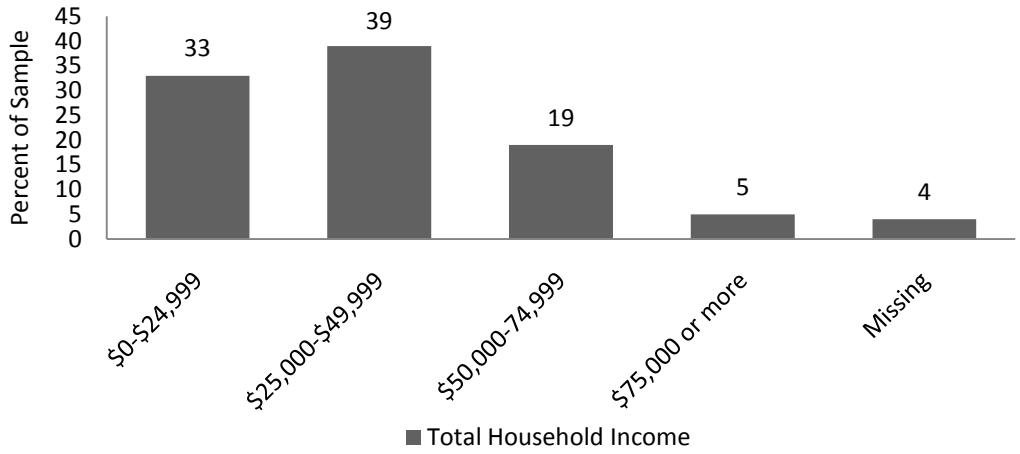

Figure 6. Total Household Income

Participants' Education Levels

Fifteen percent of participants had a high school diploma or less. A majority of participants, however, had some postsecondary educational experience. Six percent had some technical training or diploma, 20% had attended or were currently attending college, 18% had received an associate degree, 36% held a bachelor degree, and 3% had an advanced degree. Two percent of participants did not respond to the question (see Figure 7).

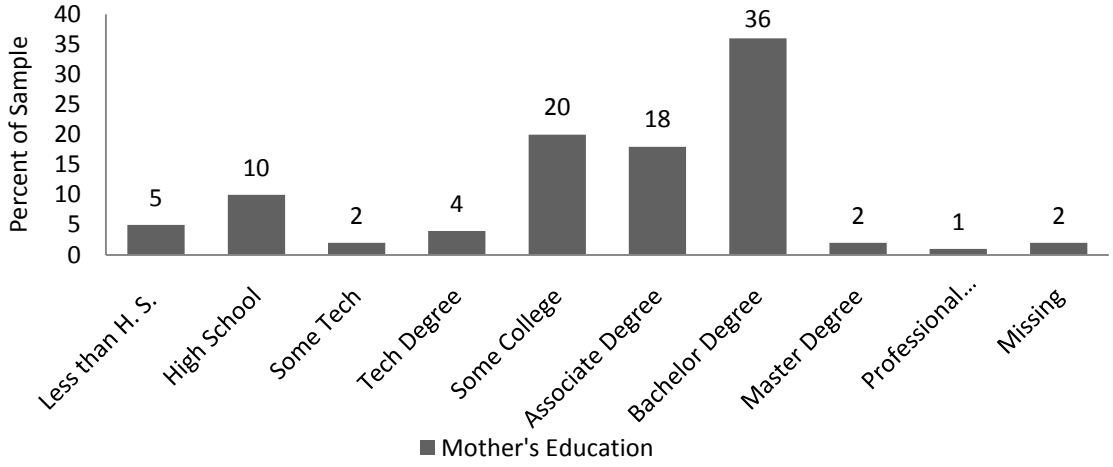

Figure 7. Mother's Education

Participants' Plans for their Children's Schooling

Most parents (62%) planned to send their child to traditional public school. The next most popular choice was charter schools at 12%. Five percent of participants responded that they would select private nonreligious school, private religious school, or home school. Nineteen percent of participants had not decided what type of school they desired for their child and 2% of participants did not respond to this question (see Figure 8).

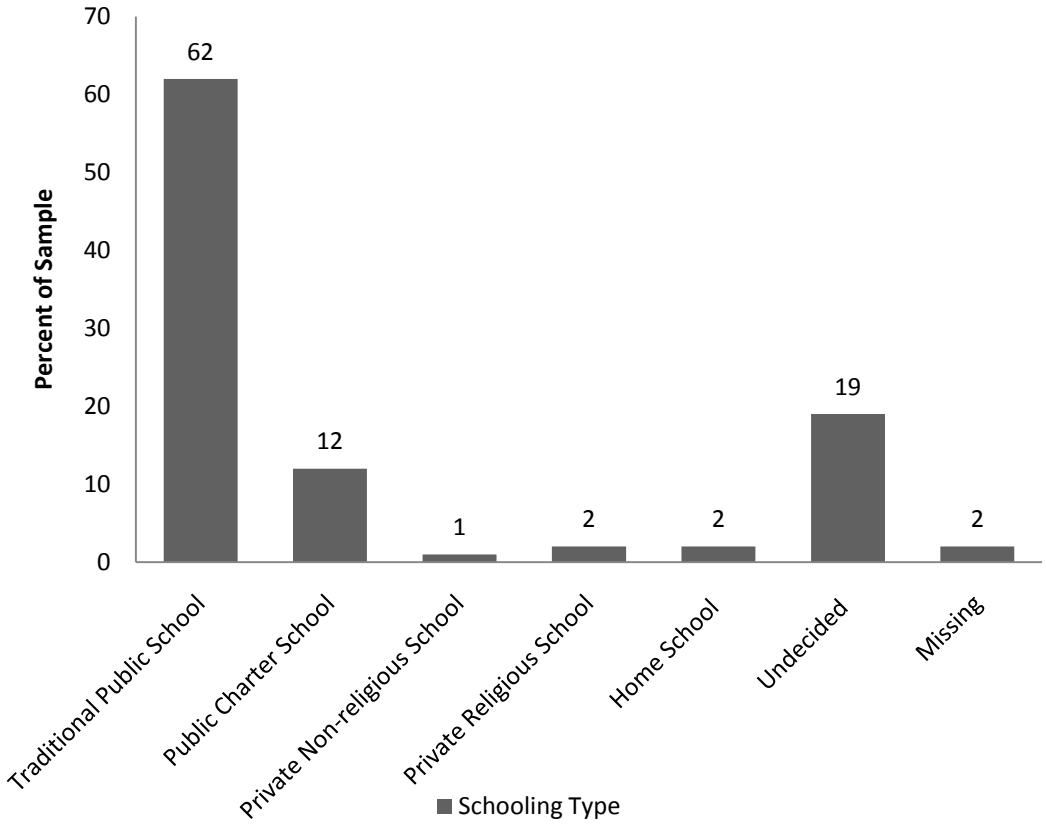

Figure 8. Plans for Child's Schooling (public, private, charter, etc.)

Number of Children

Sixty percent of the participants reported this to be their first child. Thirteen percent of participants had one other child, 14% of participants had two children, 10% of participants had three children, 1% of participants had four children, and 2% of participants reported having five children. No participants reported having more than five children (see Figure 9).

Marital Status

As expected from the over-all demographics of the sample location, 77% of participants were currently married to and living with the child's father. Of the other 23%, 2% of participants were married to but separated from the child's father, 5% of participants were currently engaged to the child's father, 6% of participants were cohabitating with the child's father, 2% were heterosexual partners with the child's father, and 8% did not respond to this question (see Figure 10).

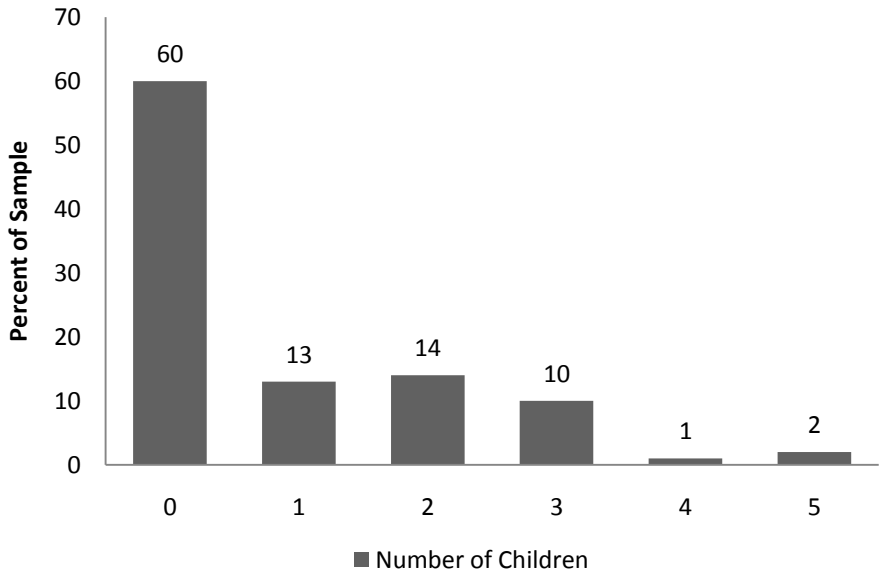

Figure 9. Number of Children

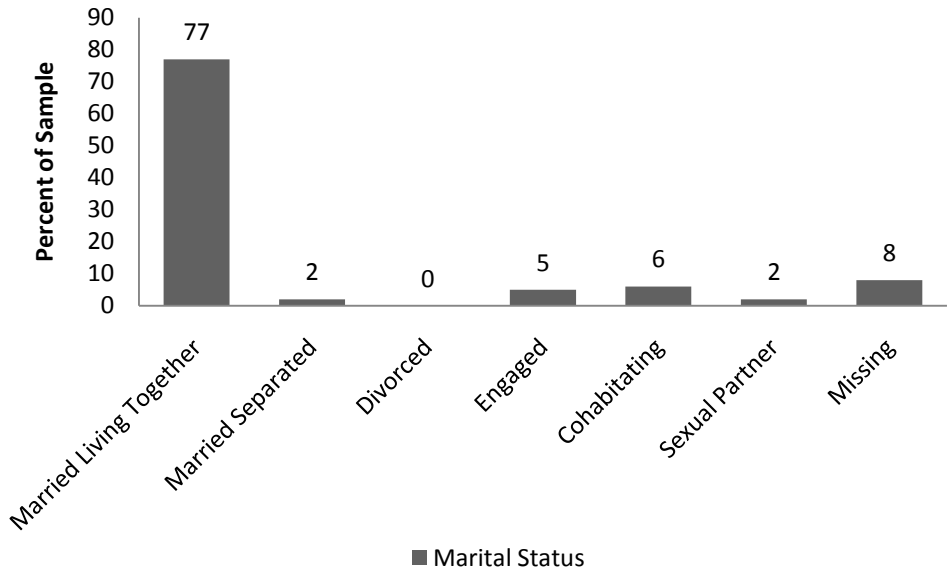

Figure 10. Marital Status of Mother

Other Household Characteristics

Ninety-six percent of participants lived in households that had four or fewer people. Thirty-two percent of participants owned their own homes, 53% rented, and 15% had some other arrangement. Ninety-one percent had a computer in the home and 88% had internet access. Seventy-five percent of families had moved at least once in the past 3 years and 34% had moved twice or more. And finally, 37 participants had received some type of government aid within the past 12 months, 19 of those receiving aid from more than one agency.

Participants' Religious Affiliations

Although participants were not specifically asked to report their religious affiliation, it is important to note that the majority (at times as high as 88%) of Utah County residents are affiliated with the Church of Jesus Christ of Latter-day Saints (LDS). This fact may be significant because of the strong emphasis the LDS Church has

placed on its members receiving as much education as possible. Early studies suggested that LDS women have college graduate rates similar to those associated with the Jewish faith or those who are not affiliated with any religion (Brinkerhoff & MacKie, 1985).

Measurement Instrument and Materials

The survey instrument for this study was created primarily by extracting all survey questions pertinent to my study from the *Parent and Family Involvement in Education Survey* (PFI) designed and developed by the National Center for Education Statistics (NCES). The PFI Survey was created as part of the National Household Education Surveys Program (NHES), which was designed to collect information on important educational issues through random digit dial (RDD) telephone surveys of households in the United States. The NHES:2003 screener was used to see if households were eligible for either of two topical surveys: one dealing with parent and family involvement (PFI), the other with adult continuing education (AEWR).

For the creation of my measurement instrument, I examined the complete telephone interview, both the screener and the PFI survey itself, as reported in the National Household Education Surveys; Data File User's Manual, Volume 1. From the survey, I extracted all questions directly and indirectly related to parental expectations, as well as the parental background variables (age, ethnicity, socio-economic status, educational attainment, and family structure).

To ensure the survey instruments were as identical as possible, I digitally cut the questions from the downloadable file and pasted them into my survey document. Due to differences in data collection methods (telephone interview vs. a paper survey), some

noncritical wording had to be changed or dropped. For example, phrases such as “let me see if I heard you correctly” were dropped for the written survey.

Additionally, some questions had to be modified to maintain the anonymity of the participant. For example, the PFI survey asked for the first names and ages of each family member. Because these data were not essential for my study, it was removed from my survey and replaced with gender and age descriptors only. Likewise, some multiple choice questions contained options that were not possible for the sample population. These were also modified or dropped accordingly. Further, a few of the questions offered responses that were eventually aggregated for reporting. For my survey, I presented these questions in their already aggregated form. Finally, a small number of questions were added or adjusted to clarify study variables specific to the participant. The most notable of these was the inclusion of questions regarding the participant’s age.

The survey was divided into seven categories: (a) ethnicity and country of origin, (b) age, (c) employment and income, (d) educational expectations, (e) language, (f) family composition, and (g) household information. The first three sections included very basic socioeconomic information. The section on educational expectations asked participants to describe their expectations for their child’s ultimate educational attainment (college degree etc.), general school performance (mostly As, mostly Bs, etc.), and school type (public school, private school, home-school, etc.). In the section on language, participants were asked to report the first language learned by both mother and father of the child, the language most spoken at home, and the language they intend to speak with their child. Finally, participants were surveyed regarding household characteristics such

as homeownership and family size. The survey contains a total of 43 multiple choice or fill-in-the-blank questions. The time to complete the survey ranged from 5 to 8 minutes.

Data Collection

Surveys were distributed to physicians' offices, health, and prenatal clinics primarily in the Utah Valley area of Utah. Locations were selected based on their willingness to have patients participate and the opportunity for diversity required by the research design and statistical analysis. Having taught both high school and college courses in the Utah Valley area, I was very fortunate to find several locations that had former students on the staff. This facilitated their willingness to have their office assist in the collection process.

Due to the nature of the collection locations (primarily doctors' offices and pre-natal clinics), potential participants usually had a "wait time" of several minutes prior to their appointments. This built in wait time and the personal contacts with the receptionists were very conducive to participation and an extremely high return rate. Only 1 known potential respondent opted not to take the survey. Furthermore, the great majority of participants were able to complete and return the survey prior to meeting with the physician or counselor.

In the initial contact with potential participants, they were asked to participate in an anonymous study regarding pregnant women that was being conducted by a doctoral student at the University of Utah. Once they agreed to participate, they were given a packet including a cover letter that described the study, its importance, and their complete anonymity. The packet also contained the survey and a small gift of appreciation.

A majority of packets were distributed and collected by the various office receptionists; however, on two separate occasions, I was able to spend several hours at a physician's office personally distributing and collecting packets. Participants who completed the survey prior to leaving the office generally returned the survey to the receptionist; when not, they completed the survey at home and placed it in the mail in the self-addressed stamped envelope. A small number of participants (less than 10) were also obtained through personal contacts. Because the distribution and collection processes placed an additional burden on the office receptionists, they were given a small gift of appreciation at the conclusion of data collection.

Data Analysis

Data Type

The variables in this study are of at least three different data types: (a) continuous scores, giving values of a variable located on a continuum; (b) rank order scores, demonstrating position relative to the positions held by other persons or objects; and (c) categorical data, representing variables that have no quantitative meaning. The criterion measure in this study, parental expectations for educational attainment, has some of the properties of continuous data, discrete scores, rank scores, and categorical data. For example, it might be argued that a bachelor's degree can be considered greater than an associate's degree on a continuum. However, for some fields of study, an associate's degree represents the ceiling of educational possibilities. Furthermore, determining the placement of trade and technical degrees on a continuum with other degrees is challenging.

A further complication comes in the PFI reporting. Even though the PFI survey asks parents to delineate between a vocational school and 2 or more years of college, data from these two categories are aggregated in the reported frequency distribution percentages. Therefore, the reported scores appear to be on a rank order continuum (i.e. less than high school, high school, some college, 4-year degree, and graduate school) even though the survey did not present them as such.

Due to these and other issues, in this study, "parental expectations" was considered as categorical data with a rank order type analyses on the aggregated data. This decision is of utmost importance owing to the fact that the data types selected are instrumental in determining which types of data analysis can and should be done. Since categorical data can only be treated with particular analysis techniques, data type becomes particularly important. In light of these decisions, a detailed description of the analyses that I will perform follows.

Frequency Distribution

To provide basic descriptive statistics and to glean comparison data for use with the Lippman et al. (2008) study, measures of tendency were first calculated. Because the criterion variable (parental expectations) is fundamentally categorical, the findings are summarized through the creation of frequency distributions. For this study, they are expressed in percentages by variable. This was accomplished by matching individual predictor variables (age, education, etc.) with the criterion variable (reported parental expectations) from which a frequency distribution was created using a regular tally system. From the frequency distribution, percentages were calculated and a distribution table was created.

Chi-Square Test of Independence

The chi-square test of independence (χ^2) is used to determine if pair observations on two or more variables are independent of each other or whether they are associated or correlated with one another. To test for correlation between independent and dependent variables, I performed a chi-square test of independence using the frequency distribution data on each of the variable pairs. The level for significance was $p = .05$. The results of each chi-square test are reported along with the frequency distributions for each variable pair in Chapter 4.

Multivariate Analysis

To determine the predictive value of the independent variables, I chose to do a *discriminant function analysis.* Discriminant function analysis is used for determining the correlation between a set of predictor variables and a criterion variable that is in the form of categories. More specifically, discriminant analysis demonstrates the ability to predict the criterion variable from a group of predictor variables. For this analysis, participants' expectations served as the criterion variable. The independent or predictor variables were the six different background variables collected from each participant (age, ethnicity, etc.).

Discriminant analysis provided a model that allowed prediction of group membership when only the predictor variables were known. In other words, the analysis measured the degree to which a participant's expectations could be predicted based on their surveyed background variables. Furthermore, the analysis demonstrated which variable served as the best predictor of participant expectations. Finally, it showed how combinations of different variables correlated with parents' expectations.

The multiple correlation coefficient (R) was used to measure the magnitude of the relationship between parental expectations and combinations of predictor variables. The coefficient of determination (R^2) was determined to express the amount of variance in the criterion variable that is explained by each additional predictor variable.

Three types of discriminant function analysis are possible: (a) standard or direct, (b) hierarchical, and (c) statistical or stepwise. In standard (direct) discriminant analysis, all predictors enter the equation simultaneously. In a hierarchical discriminant analysis, the researcher determines the order in which predictor variables enter the equation. And in stepwise discriminant analysis, the entry of predictors is determined by user-specified statistical criteria.

In this study, I performed stepwise and direct analyses. These analyses included all independent and dependent variables for both grade and attainment expectations. Data were taken from the grade and attainment frequency tables. These analyses were done in the SAS (Statistical Analysis Software) DISCRIM function and its companion software STEPDISC.

Each stepwise analysis included the six independent variables of ethnicity, age, income, education, marital status, and number of children. The three criterion groups for grade expectations were (a) expects mostly As, (b) expects mostly Bs, and (c) undecided. The five criterion groups for attainment expectation groupings were (a) complete high school, (b) complete some college, (c) receive a bachelor's degree, (d) receive an advanced degree, (e) and undecided. The significance level for entry was p=.15. Three different multivariate statistics were used to aid in the determination of which functions

would be included: (a) Wilks' Lamba, (b) Pillai's Trace, and (c) the average squared canonical correlation.

In the direct analyses all six independent variables were forced into the discriminant function equation. The results were reported in terms of error count percentages. Error count percentages are the number of participants that are incorrectly classified based on the prediction model created by the discriminant analysis. For example, an error count of .7273 would mean that the model predicted 72.73% of the participants incorrectly. The magnitude of the error count is subjective and is often compared to the prior probability. Prior probability is what could be expected if the classification had been done by chance.

Multicollinearity in this study was measured in terms of tolerance levels as demonstrated in the stepwise analysis (see Chapter 4). As a further precaution, I also performed a *Pearson Product Moment Correlation* which confirmed the tolerance levels reported in the discriminant function analyses.

Limitations and Challenges

The initial, and perhaps most significant, challenge was securing sufficient numbers of participants from each subgroup. This challenge stemmed from the restrictive nature of the inclusion requirements (pregnancy) and the homogeneity of some of the expectant mothers' characteristics (e.g., age). The use of self-reported measures distributed by a third-party also caused some challenges in response rates. In a day when academic success and college attendance are considered highly desirable, it is also possible that *social desirability bias* may have occurred. This is the case when respondents give what they believe is the socially desirable response.

Nonsampling error and oversampling was also of concern due to the data collection locations. Although many expecting women have regular appointments with an obstetrician, some women select alternative or no outside prenatal care based on individual beliefs and circumstances. This is a problem due to the possibility of categorical differences in the predictor variables between those who receive prenatal care and those who do not. Finally, because participants were volunteers, it may have created an atypical sample and additional nonrespondent bias.

To minimize these concerns, the measurement instrument is clear, concise, and void of value-laden questions or statements. Additionally, the cover letter will stress the complete anonymity of participants and further explain that research such as this provides helpful information for all parents. To aid in the attractiveness of participating, a small gift will be included in each packet. Finally, a pilot test of the measurement instrument will be conducted among 10 participants to analyze the appropriateness of the instrument and to look for potential challenges and pitfalls. The participants in this pilot sample will be given the opportunity to rate the various portions of the measurement instrument and provide additional written feedback.

Questionnaire legitimacy (i.e., convincing the respondent that the study is legitimate and worth the effort of response [Drew et al., 2008]) will also be addressed by a cover-letter explaining the importance of the study and its benefit to parents. The brevity and exactness of the questionnaire design in conjunction with the limited number of open-ended questions should also lead to a higher completion rate. Because this measurement instrument is taken directly from the PFI survey, it benefits greatly from the many pilot studies and analyses conducted by the NCES on the full survey. Although

some questions have been dropped or slightly modified, there are no indications that this instrument would respond to analysis differently than the full length original survey.

CHAPTER 4

RESULTS

The purpose of this study was to investigate whether a significant correlation exists between the background characteristics of expectant mothers and their educational expectations for their unborn children. The overarching research questions of this study included the following:

1. How do expectant mothers' academic expectations of their unborn children vary as a function of ethnicity, age, income, educational background, marital status, and number of children?
2. Which variable or combinations of variables have the most predictive power for parental expectations and to what degree can they predict parental expectations?
3. Do all parents have set educational expectations prior to receiving feedback regarding their child's abilities and performance?

The findings are reported in this chapter in three sections. Each section reports the data relative to one of the three research questions, respectively. Each section concludes with a brief summary.

Research Question I

How do expectant mothers' academic expectations for their unborn children vary as a function of ethnicity, age, income, educational background, marital status, and family size?

In this section, I report the findings that illustrate how participants' expectations vary as a function of their background variables. I begin by presenting the survey results regarding the two dependent variables: grade and attainment expectations. I then examine each of the six background variables in relation to each of the two types of expectation: 12 pairs of variables in all. The reporting of each pair of variables begins with a statement regarding the findings of the frequency distributions; this is followed by a presentation of the descriptive statistics and a reporting of the chi-square test of significance. A frequency distribution table is also included for each pair of variables.

Survey Results for Grade and Attainment Expectations

Participants were asked two questions regarding their expectations for their child's education: expected school performance, as measured by grades; and expected educational attainment, as measured by postsecondary schooling.

As anticipated, a majority of participants (69%) expected their child to receive mostly A grades. However, a smaller group (21%) reported that they expected mostly B grades from their child. Only 1 participant expected mostly C grades from her child. Nine percent of participants had no specific grade expectations for their child at this time (see Figure 11).

Seventy-seven percent of participants expected their children to receive a bachelor degree or higher. Of that group, 49% percent of them expected their children to receive a bachelor's degree and 28% expected a graduate or professional degree. Of the 19% of participants that expected less than a bachelor degree, 16% expected them to attend 2 or more years of college and 3% expected them to attain a high school degree (see Figure 12).

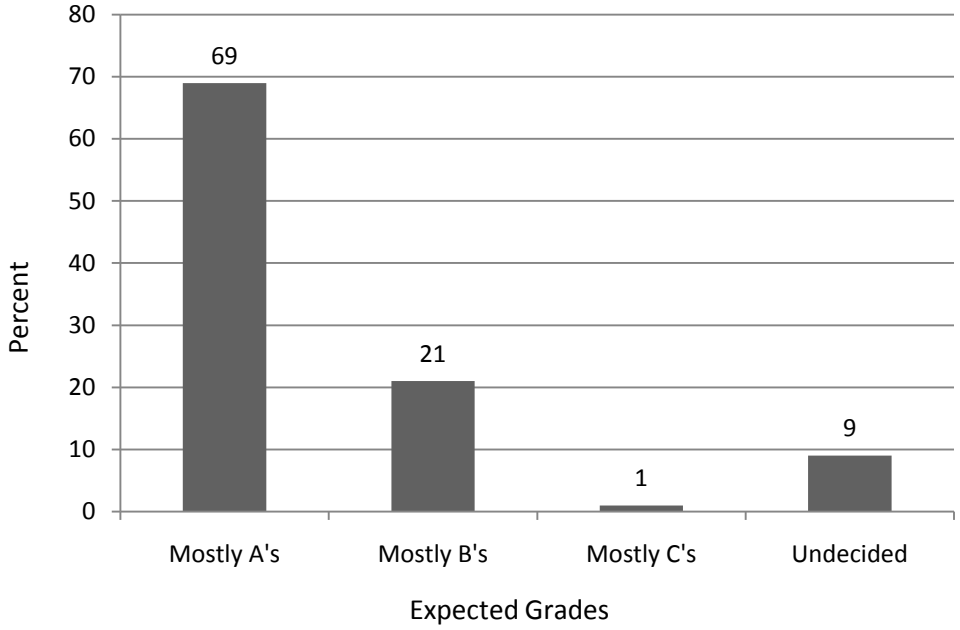

Figure11. Participants' Expected Grades for their Children by Percent

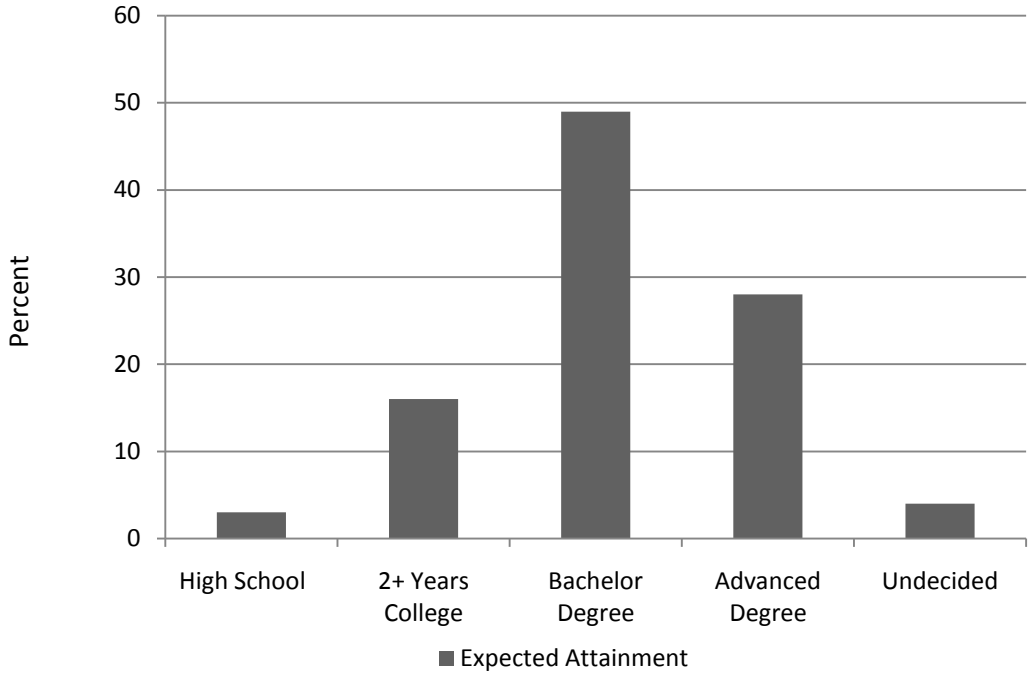

Figure 12. Participants' Expected Attainment for their Children by Percent

Pairs of Variables

Ethnicity and Grade Expectations

Whites in this sample had slightly higher grade expectations for their children than non-Whites. As demonstrated in Table 1, 73.5% of Whites expected their children to receive mostly A grades, compared to 59.3% of non-Whites who expected the same. Also, 17.6% of White participants expected B or C grades as compared to 31.3% of non-Whites. Those who reported having no predetermined expectations at the time of the survey were similar at 8.8% for Whites and 9.4% for non-Whites. The results of a chi-square test, χ^2 (2, N = 100) = 2.79, p >.05, suggested that ethnicity and grade expectations are independent of each other in this sample.

Ethnicity and Educational Attainment Expectations

The frequency distributions for ethnicity and attainment expectations (see Table 2) show that non-White participants had a higher rate of graduate degree expectation than White participants. Even though the expectations for achieving a bachelor's degree or beyond among both White and non-White participants were both approximately 77%, a greater number of non-White participants expected that their child would continue on to earn some type of graduate degree at 34.4% compared to White participants at

Table 1
Ethnicity and Grade Expectations

Ethnicity	Total Participants	Expect As	Expect Bs*	No Expectation
Whites	68	73.5%(50)	17.6%(12)	8.8%(6)
Non-Whites	32	59.3%(19)	31.3%(10)	9.4%(3)

Note. The expect Bs category also includes the only participant that expected Cs.

Table 2
Ethnicity and Educational Attainment Expectations

Ethnicity	Total Participants	Expect high school or less	Expect 2+ Years of College	Expect Bachelor degree	Expect graduate or professional degree	Undecided
Whites	68	4.4% (3)	17.6% (12)	51.4% (35)	25.0% (17)	1.5% (1)
Non-Whites	32	0.0% (0)	12.5% (4)	43.6% (14)	34.4% (11)	9.4% (3)

25.0%. Additionally, the percentage of White participants who expected two or more years of college was greater at 17.6% than non-White participants at 12.5%. Further, only White participants expected their child to earn only a high school diploma. The chi-square test for these variables, χ^2 (4, N = 100) = 6.43, $p > .05$, approached significant levels but failed to demonstrate correlation at p =.05 level.

Age and Grade Expectations

Mothers' grade expectations varied slightly according to their age. The responses from the four categories showed that two age groups, 18-21 year olds and 26-29 year olds, had nearly the same A grade expectation frequencies at 66.6% and 67.8%, respectively. The 22-25-year-old group had slightly higher expectations at 77.4%, and participants 30 years old or older had somewhat lower expectations at 60.8% (see Table 3). As expected, the chi-square test for age and grade expectations did not demonstrate a significant relationship between the two variables; χ^2 (6, N = 100) = 12.59, $p > .05$.

Age and Attainment Expectations

The frequency distributions for age and attainment expectations showed some variance between participant age groups, particularly among the youngest and oldest age

Table 3
Age and Grade Expectations

Age	Total Participants	Expect As	Expect Bs*	No Expectations
18-21	18	66.6% (13)	22.2% (4)	5.6% (1)
22-25	31	77.4% (24)	16.1% (5)	6.4% (2)
26-29	28	67.8% (19)	21.4% (6)	10.7% (3)
30+	23	60.8% (14)	26.1% (6)	13.0% (3)

Note. The expect Bs category also includes the only participant that expected Cs.

groups. Of the participants in the 18-21 year old group, 11.1% expected a high school diploma or less, 33.3% expected 2 or more years of college, 38.9% expected a bachelor degree, 11.1% expected a graduate or professional degree, and 5.6% were undecided. Of the participants in the 22-25 year old group, 3.2% expected a high school diploma or less, 9.7% expected 2 or more years of college, 54.8% expected a bachelor degree, 29.0% expected a graduate or professional degree, and 3.2% were undecided.

Of the participants in the 26-29 year old group, 0.0% expected a high school diploma or less, 17.9% expected 2 or more years of college, 50.0% expected a bachelor degree, 28.6% expected a graduate or professional degree, and 3.6% were undecided. Of the participants in the 30 years old or older group, 0.0% expected a high school diploma or less, 8.7% expected 2 or more years of college, 47.8% expected a bachelor degree, 39.1% expected a graduate or professional degree, and 4.3% were undecided.

Even though there appeared to be some expectation trends in the data, the results of the chi-square test, χ^2 (12, N = 100) = 15.46, p >.05, failed to show relations between mothers' age and their attainment expectations at the determined significance level of p =.05 (see Table 4).

Table 4
Age and Educational Attainment Expectations

Age	Total Participants	Expect high school or less	Expect 2+ years college	Expect Bachelor degree	Expect graduate or professional degree	Undecided
18-21	18	11.1% (2)	33.3% (6)	38.9% (7)	11.1% (2)	5.6% (1)
22-25	31	3.2% (1)	9.7% (3)	54.8% (17)	29.0% (9)	3.2% (1)
26-29	28		17.9% (5)	50.0% (14)	28.6% (8)	3.6% (1)
30+	23		8.7% (2)	47.8% (11)	39.1% (9)	4.3% (1)

Income and Grade Expectations

Of the three income groups that reported a substantial number of participants (only 5 participants reported an income of $75,000 or more), the $25,000-$49,999 income group reported the lowest grade expectations. Of the participants in the $0-$24,999 income group, 72.7% expected A grades, 18.2% expected B grades, and 9.0% were undecided. Of the participants in the $25,000-$49,999 income group, 59.0% expected A grades, 30.7% expected B grades, and 10.3% were undecided. Of the participants in the $50,000-$74,999 income group, 73.7% expected A grades, 21.0% expected B grades, and 5.0% were undecided. Of the participants in the $75,000 or more income group, 100.0% expected A grades (see Table 5).

No obvious reason for the lower expectations among the $25,000-$49,999 income group was evident in the data. An examination of the total survey data showed that this group very closely matched the means for the entire population in every variable except income.

Table 5
Family Income and Grade Expectations

Income	Total Participants	Expect As	Expect Bs	Undecided
$24,999 or less	33	72.7% (24)	18.2% (6)	9.0% (3)
$25,000 to $49,999	39	59.0% (23)	30.7% (12)	10.3% (4)
$50000 to $74,999	19	73.7% (14)	21.0% (4)	5.0% (1)
$75,000 or more	5	100% (5)		

Note. The expect Bs category also includes the only participant that expected Cs.

Furthermore, the results of the chi-square test, χ^2 (4, N = 91) = 3.36, $p > .05$, on the three lower income groups suggested that income and grade expectations were independent of each other.

Income and Attainment Expectations

The frequency distribution showed that mothers' attainment expectations were very similar for the $0-$24,999 and $50,000-$74,999 income groups. In contrast to their relatively lower grade expectations, the $25,000 to $49,999 income group had slightly higher attainment expectations.

Of the participants in the $0-$24,999 income group, 3.0% expected a high school diploma or less, 18.2% expected 2 or more years of college, 42.4% expected a bachelor degree, 30.3% expected a graduate or professional degree, and 6.0% were undecided. Of the participants in the $25,000-$49,999 income group, 2.6% expected a high school diploma or less, 10.3% expected 2 or more years of college, 56.4% expected a bachelor degree, 25.6% expected a graduate or professional degree, and 5.1% were undecided. Of the participants in the $50,000-$74,999 income group, 0.0% expected a high school

diploma or less, 26.3% expected 2 or more years of college, 47.4% expected a bachelor degree, 26.3% expected a graduate or professional degree, and 0.0% were undecided. Of the participants in the $75,000 or more income group, 20.0% expected a high school diploma or less, 0.0% expected 2 or more years of college, 60.0% expected a bachelor degree, 20.0% expected a graduate or professional degree, and 0.0% were undecided (see Table 6).

Even though their existed some variation in expectations between income groups, the results of the chi-square test χ^2 (12, N = 96) =14.25, $p > .05$ revealed that the differences between groups did not demonstrate a significant correlation between variables.

Mother's Education and Grade Expectations

Mothers' grade expectations varied substantially according to their personal educational backgrounds. In the three categories where sufficient data was available (only

Table 6
Family Income and Educational Attainment Expectations

Income	Total Participants	Expect high school or less	Expect 2+ years of college	Expect Bachelor degree	Expect graduate or professional degree	Undecided
$0 to $24,999	33	3.0% (1)	18.2% (6)	42.4% (14)	30.3% (10)	6.0% (2)
$25,000-$49,999	39	2.6% (1)	10.3% (4)	56.4% (22)	25.6% (10)	5.1% (2)
$50,000-$74,999	19	0.0% (0)	26.3% (5)	47.4% (9)	26.3% (5)	0.0% (0)
$75,000 or more	5	20.0% (1)	0.0% (0)	60.0% (3)	20.0% (1)	0.0% (0)

3 participants reported graduate or professional degrees), as participants education level increased, the likelihood that they would expect A grades from their child also increased. Moreover, the likelihood that parents would have undecided expectations was much higher for those with no college experience (20.0%) than those who had some college (4.4%) or a bachelor degree (5.5%).

Of participants who had a high school degree or less, 33.3% expected A grades, 46.6% expected B grades, and 20.0% were undecided. Of participants who had a some college experience but less than a bachelor degree, 71.1% expected A grades, 26.6% expected B grades, and 4.4% were undecided. Of participants who had a bachelor degree, 83.3% expected A grades, 11.1% expected B grades, and 5.5% were undecided. Of participants who had a graduate or professional degree, 33.3% expected A grades, 0.0% expected B grades, and 66.7% were undecided. The results of the chi-square test of significance revealed a significant correlation between a mother's education and her grade expectations; χ^2 (4, N = 100) = 13.32, $p < .05$ (see Table 7).

Mother's Education and Attainment Expectations

A majority of mothers expected their children to obtain some postsecondary education. Ninety-seven percent of those holding a bachelor's degree expected their child to receive at least a bachelor degree. One finding in this category, however, was rather unexpected. The data showed that participants with the lowest educational background were nearly equally divided between the different expectation groups.

Table 7
Mother's Education and Grade Expectations

Education	Total Participants	Expect As	Expect Bs*	Undecided
High School or Less	15	33.3% (5)	46.6% (7)	20.0% (3)
Some College, less than a bachelor degree	45	71.1% (32)	26.6% (12)	4.4% (2)
Bachelor Degree	36	83.3% (30)	11.1% (4)	5.5% (2)
Graduate or Professional Degree	3	33.3% (1)	0.0% (0)	66.7% (2)

Note. The expect Bs category includes the only participant that expected Cs.

Of the participants who had a high school degree or less, 20.0% expected a high school diploma or less, 20.0% expected 2 or more years of college, 13.3% expected a bachelor's degree, 33.3% expected a graduate or professional degree, and 13.3% were undecided. Of the participants who had some college but less than a bachelor's degree, 0.0% expected a high school diploma or less, 26.1% expected 2 or more years of college, 52.2% expected a bachelor's degree, 17.4% expected a graduate or professional degree, and 4.3% were undecided.

Of the participants who had a bachelor's degree, 0.0% expected a high school diploma or less, 2.8% expected 2 or more years of college, 61.1% expected a bachelor's degree, 36.1% expected a graduate or professional degree, and 0.0% were undecided. Of the participants who had a high graduate or professional degree, 0.0% expected a high school diploma or less, 0.0% expected 2 or more years of college, 66.7% expected a bachelor's degree, 33.3% expected a graduate or professional degree, and 0.0% were undecided (see Table 8).

Table 8
Mother's Education and Educational Attainment Expectations

Mother Education	Total Participants	Expect high school or less	Expect 2+ years of College	Expect Bachelor degree	Expect graduate or professional degree	Undecided
High School or Less	15	20.0% (3)	20.0% (3)	13.3% (2)	33.3% (50	13.3% (2)
Less than a bachelor degree	46	0.0% (0)	26.1% (12)	52.2% (24)	17.4% (8)	4.3% (2)
Bachelor Degree	36	0.0% (0)	2.8% (1)	61.1% (22)	36.1% (13)	0.0% (0)
Graduate or Profess. Degree	3	0.0% (0)	0.0% (0)	66.7% (2)	33.3% (1)	0.0% (0)

The chi-square test of significance revealed that the variables of mother's education and educational attainment expectations were significantly correlated; χ^2 (8, N = 100) = 36.33, p <.05. Due to the low number of participants with advanced or professional degrees (3), they were eliminated from the chi-square test.

Mother's Marital Status

Due to the relatively small numbers of participants in each of the "unmarried" categories, it was statistically beneficial to combine the original six groups into two groups: (a) married and (b) unmarried. These groups were selected based on the inherent differences in legal status as well as living and financial arrangements between them. Table 9 reports the frequency distributions for the original categories as well as the combined categories. The combined categories were used for the chi-square test and the discriminant function analysis.

Table 9
Marital Status and Grade Expectations

Marital Status	Total Participants	Expect As	Expect Bs*	Undecided
Married living together	77	70.1% (54)	20.8% (16)	9.1% (7)
Married but separated	2	100% (2)		
Divorced	0			
Engaged	5	60.0% (3)	20.0% (1)	20.0% (1)
Cohabitating	6	66.7% (4)	16.7% (1)	16.7% (1)
Sexual Partners no living arrangements	2	50.0% (1)	50.0% (1)	
All married combined	79	70.9% (56)	20.2% (16)	8.9% (7)
All nonmarried	13	61.5% (8)	23.0% (3)	15.4% (2)

Note. The expect Bs category includes the only participant that expected Cs.

Mother's Marital Status and Grade Expectations

Some differences were reported in grade expectations according to participants' marital status. Of participants who were married, 70.9% expected A grades, 20.2% expected B grades, and 8.9% were undecided. Of participants who were not married, 61.5% expected A grades, 23.0% expected B grades, and 15.4% were undecided (see Table 9). Although the distribution tables suggested a tendency for married participants to have higher grade expectations, the chi-square test results, χ^2 (2, N = 92) = .78, p >.05, showed that mother's marital status and grade expectations were not significantly correlated.

Mother's Marital Status and Attainment Expectations

Comparatively large differences in expectations between marital status were revealed in the data. Participants married to the child's father were less likely to expect only a high school diploma and more likely to expect a bachelor's degree. Of the married participants, 0.0% expected a high school diploma or less, 17.7% expected 2 or more years of college, 49.4% expected a bachelor's degree, 30.4% expected a graduate or advanced degree, and 2.5% were undecided. Of the nonmarried participants, 23.1% expected a high school diploma or less, 7.7% expected 2 or more years of college, 38.5% expected a bachelor's degree, 30.8% expected a graduate or professional degree, and 0.0% were undecided (see Table 10). The chi-square test for mother's marital status and attainment expectations showed that there was a significant correlation between the two variables; χ^2 (4, N = 92) = 20.68, p <.05.

Number of Children and Grade Expectations

To maximize the statistical usefulness of the number of children and expectations data, participants were combined into two groups: (a) no children, and (b) children. The combined groups were used for the chi-square test and the discriminant function analysis.

The distributions for grade expectations and number of children revealed only minor variations between groups. Of the participants who had no other children, 69.0% expected A grades, 25.9% expected B grades, and 5.2% were undecided. Of the participants who had other children, 69.0% expected A grades, 16.7% expected B grades, and 14.3% were undecided. The chi-square test results showed that number of children and grade expectations were independent variables having no significant correlation; χ^2 (2, N = 100) = 3.25, p >.05 (see Table 11).

Table 10
Marital Status and Educational Attainment Expectations

Marital Status	Total Participants	Expect high school or less	Expect 2+ years of college	Expect Bachelor degree	Expect graduate or professional degree	Undecided
Married living together	77	0.0% (0)	18.2% (14)	50.6% (39)	28.6% (22)	2.6% (2)
Married but separated	2	0.0% (0)	0.0% (0)	0.0% (0)	100%	0.0% (0)
Divorced	0	-	-	-	-	-
Engaged	5	20.0% (1)	20.0% (1)	40.0% (2)	20.0% (1)	0.0% (0)
Cohabitating	6	0.0% (0)	0.0% (0)	50.0% (3)	50.0% (3)	0.0% (0)
Sexual Partners no living arrangements	2	100% (2)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
*All married combined	79	0.0% (0)	17.7% (14)	49.4% (39)	30.4% (24)	2.5% (2)
*All non-married	13	23.1% (3)	7.7% (1)	38.5% (5)	30.8% (4)	0.0% (0)

Table11
Number of Children in the Home and Grade Expectations

Number of Children	Total Participants	Expect A Grades	Expect B Grades	Undecided
0	58	69.0% (40)	25.9% (15)	5.2% (3)
1	12	83.3% (10)	8.3% (1)	8.3% (1)
2	17	58.8% (10)	17.6% (3)	23.5% (4)
3	10	80.0% (8)	10.0% (1)	10.0% (1)
4	1	100% (1)	0.0% (0)	0.0% (0)
5	2	0.0% (0)	100%	0.0% (0)
0	58	69.0% (40)	25.9% (15)	5.2% (3)
*1 to 5 children	42	69.0% (29)	16.7% (7)	14.3% (6)

Note. The expect Bs category includes the only participant that expected Cs. Data was combined for statistical purposes.

Number of Children and Attainment Expectations

Participants who had no other children were less likely to expect two or more years of college and more likely to expect a bachelor degree. Of the participants who had no other children, 3.6% expected a high school diploma or less, 10.7% expected 2 or more years of college, 57.1% expected a bachelor's degree, 28.6% expected a graduate or professional degree, and 0.0% were undecided. Of the participants with had other children, 2.4% expected a high school diploma or less, 23.9% expected 2 or more years of college, 42.9% expected a bachelor's degree, 28.6% expected a graduate or professional degree, and 2.4% were undecided.

The chi-square test results for number of children and attainment expectations χ^2 (4, N = 98) = 5.09, p>.05 showed that the two acted as independent variables. Therefore, the differences observed in the frequency tables were not substantial to the point of suggesting correlation (see Table 12).

Summary

In this section, findings were reported on a total of 12 potential correlations between variables. Most pairs of variables reported at least some differences between groups; however, of the 12 pairs of variables, only three showed statistically significant correlations: mother's education and grade expectations, mother's education and attainment expectations, and mother's marital status and attainment expectation.

Table 12
Number of Children in the Home and Educational Attainment Expectations

Number of Children	Total Participants	Expect high school or less	Expect 2+ years of college	Expect Bachelor degree	Expect graduate or professional degree	Undecided
0	56	3.6% (2)	10.7% (6)	57.1% (32)	28.6% (16)	0.0% (0)
1	12	0.0% (0)	25.0% (3)	33.3% (4)	41.7% (5)	0.0% (0)
2	17	5.9% (1)	23.5% (4)	47.1% (8)	23.5% (4)	0.0% (0)
3	10	0.0% (0)	30.0% (3)	30.0% (3)	30.0% (3)	10.0% (1)
4	1	0.0% (0)	0.0% (0)	100% (1)	0.0% (0)	0.0% (0)
5	2	0.0% (0)	0.0% (0)	100% (2)	0.0% (0)	0.0% (0)
0	56	3.6% (2)	10.7% (6)	57.1% (32)	28.6% (16)	0.0% (0)
*1 to 5	42	2.4% (1)	23.9% (10)	42.9% (18)	28.6% (12)	2.4% (1)

Research Question II

Which variable or combinations of variables have the most predicative power for parental expectations and to what degree can they predict parental expectations?

To investigate which variable or variables are the best predictors of participants' expectations and the degree to which they can predict those expectations, I performed a series of stepwise and direct discriminant function analyses. Discriminant function analysis is useful in predicting group membership when the data is nonlinear or categorical, as is the case in this study. Additionally, discriminant function analysis can reveal the combinations of variables that demonstrate the most predicative power.

I begin this section with a brief introduction to the workings and benefits of using discriminant function analyses on the type of data I collected. I then report the findings of the stepwise and direct discriminant analyses for the "grade expectation" data and the "attainment expectation" data, respectively. The stepwise findings are used to report which variable or variables have the most predicative power. The direct analysis findings are used to report the degree of prediction.

Discriminant Function Analysis

The primary purpose of a discriminant function analysis is to predict group membership from a set of predictors (Tabachnick & Fidell, 2006). In terms relative to this study, how well do participants' background variables predict their educational expectations for their child? And which variables are the best predictors?

Three types of discriminant function analysis are possible: (a) standard or direct, (b) hierarchical, and (c) statistical or stepwise. In standard (direct) discriminant analysis, all predictors enter the equation simultaneously. In a hierarchical discriminant analysis,

the researcher determines the order in which predictor variables enter the equation. And in stepwise discriminant analysis, the entry of predictors is determined by user-specified statistical criteria.

To answer the question of which variable or variables have the greatest predicative power, I performed a stepwise analysis that included all independent and dependent variables. Data for the analysis were taken from the grade and attainment frequency tables. These analyses were done in the SAS (Statistical Analysis Software) DISCRIM function and its companion software STEPDISC. I chose to do a stepwise analysis because it reveals which variables demonstrate the greatest ability to predict group assignment. It also allows for variables that have little or no predictive power to be removed from the equation, which increases the degrees of freedom.

Stepwise Analysis for Grade Expectations

The stepwise analysis for grade expectations included the six independent variables of ethnicity, age, income, education, marital status, and number of children. The three possible expectation groupings were (a) expects mostly As, (b) expects mostly Bs, and (c) undecided. The significance level for entry was (p=.15). Three different multivariate statistics were used to aid in the determination of which function s would be included: (a) Wilks' Lamba, (b) Pillai's Trace, and (c) the average squared canonical correlation.

The result of the stepwise discriminant analysis was the elimination of all variables from the equation except one, mother's education. As seen in Table 13, the linear discriminant functions for education revealed the strongest coefficients for each grade expectation. Participant's age and marital status had the next strongest

Table 13
Linear Discriminant Function for Expected Grades

Variable	A	B	U
Constant	-8.92968	-18.72996	-22.46637
Ethnicity	1.29902	0.53434	1.42505
Age	1.29436	1.36732	1.46225
Income	-1.41768	-1.23367	-2.26844
Mother Ed	2.29825	1.47675	2.48756
Children	-0.59584	-0.77248	-0.37333
Marital Status	1.58198	1.44849	1.20459

coefficients. However, the *p values* for both of those variables were greater than .15; therefore, they were deemed as unreliable for inclusion.

The model's inclusion of only one variable has important implications. First, mother's education is the greatest predictor of her grade expectations. Second, the background variables that appeared to influence participants' expectations in the frequency distributions (such as ethnicity) may be only weakly correlated to participants' expectations. Third, it may be that combinations of variables can serve as more accurate predictors of grade expectations than any one variable alone.

Direct Analysis for Grade Expectations

To examine the predicative power of mother's education for grade expectations, I performed a direct discriminant analysis using mother's education as the only dependent variable as suggested in the stepwise analysis. The resulting output was an error count of .7273; or 72.73% of the classifications were incorrect (see Table 14). This error count is

higher than what would be expected if classifications had been assigned randomly (prior probability of 66.67% incorrect classification).

As demonstrated in Table 14, when only mother's education was known, the model was unable to predict between variables with any real accuracy. Zero percent of participants who expected mostly As were correctly predicted, 81.82% or those who expected mostly Bs were correctly predicted, and 0.00% of those who were undecided were correctly predicted. Frequently, the prediction calculations were equal between two variables. To compensate for this, the model created a fourth category labeled "other." Thirty-nine percent of participants were classified into the "other" category.

In an attempt to decrease the error count for expected grades, I performed a second direct discriminant analysis that forced all independent predictor variables into the equation. The resulting error count was .4275 or 42.75% of the classifications were incorrect. This was a significant improvement over the 72.73% error count when using mother's education alone (see Table 15).

As demonstrated in Table15, the addition of the other five variables greatly improved the model's ability to correctly predict grade expectations for each expectation type: mostly As, mostly Bs, and undecided. The model correctly predicted A expectations 55.07% compared to a prior probability of 33.33% correct prediction. The model correctly predicted B expectations of 50.00% compared to a prior probability of 33.33% correct prediction. And the model correctly predicted undecided expectations 66.67% compared to a prior probability of 33.33% correct prediction. The improvement in prediction is further verified by the complete elimination of the "other" category.

Table 1 4
Direct Discriminant Analysis for Grade Expectation; Mother's Ed as only Predictor Variable

Actual Classification	Number and Percent of Predicted Classifications				
	A	B	U	Other	Total
Expects A	O	38	0	31	69
%	0.00	55.07	0.00	44.93	100.00
Expects B	0	18	0	4	22
%	0.00	81.82	0.00	18.18	100.00
Undecided	0	5	0	4	9
%	0.00	55.56	0.00	44.44	100.00
Total	0	61	0	39	100
%	0.00	61.00	0.00	39.00	100.00
Predicted vs. Actual	0 of 69	18 of 22	0 of 9	39 of 0	
Prior Probability	33	33	33	0	
%	33.33%	33.33%	33.33%	00.00%	

Total Error Count for Expected Grades

Expected Grades Count	A	B	U	Total Error
Rate of Error	1.0000	0.1818	1.0000	0.7273
Prior Prob %	0.3333	0.3333	0.3333	

Table 15
Direct Discriminant Analysis for Grade Expectation including Six Predictor Variables

Actual Classification	Number and Percent of Predicted Classifications			
	A	B	U	Total
Expects A	38	19	12	69
%	55.07	27.54	17.39	100.00
Expects B	5	11	6	22
%	22.73	50.00	27.27	100.00
Undecided	1	2	6	9
%	11.11	22.22	66.67	100.00
Total	44	32	24	100
%	44.00	32.00	24.00	100.00
Predicted vs. Actual	38 of 69	11 of 22	6 of 9	
Prior Probability	33	33	33	
%	33.33%	33.33%	33.33%	

Total Error Count for Expected Grades

Expected Grades Count	A	B	U	Total Error
Rate of Error	0.4493	0.5000	.03333	0.4275
Prior Prob %	0.3333	0.3333	0.3333	

Stepwise Analysis for Attainment Expectations

The stepwise analysis for attainment expectations included the six independent variables of ethnicity, age, income, education, marital status, and number of children. The five possible expectation groupings were complete high school (HS), complete some college (SC), receive a bachelor's degree (BS), receive an advanced degree (AD), and undecided (UD). The significance level for entry was (p=.15). Three different multivariate statistics were used to aid in the determination of which functions would be included: (a) Wilks' Lamba, (b) Pillai's Trace, and (c) the average squared canonical correlation. Risk of multicollinearity is reported as tolerance levels.

In the stepwise analysis, three independent variables were selected for inclusion and three variables were excluded. As one might have suspected from the frequency tables, mother's education was the first and strongest variable entered into the equation. Mother's marital status was second and mother's ethnicity was third. The degree and direction of these relationships can be seen in the linear discriminant function analysis found in Table 16.

It should be noted that even though mother's education was the best "overall" predictor of expectations, it did not always demonstrate the highest coefficient for each expectation. For example, the *DF* for marital status and advanced degree was 4.58493 compared to mother's education at 3.9485. In other words, a participant's marital status was the greatest predictor of their expectation being an advanced degree. Similarly, ethnicity was a very strong predictor for participants who had expectations of a high school degree or less, but a weak predictor for those expecting bachelor's degrees and some college.

Table 16
Linear Discriminant Functions for Educational Attainment Expectations

Variable	AD	BA	HS	SC	UD
Constant	-26.32883	-24.04939	-13.80142	-19.38414	-19.51301
Ethnicity	-1.49178	-0.82947	3.27555	-0.06062	-2.20715
Age	1.67195	1.53067	1.12896	1.39627	1.53573
Income	-2.65660	-2.21739	-0.15198	-1.94882	-2.07748
Mother Ed	3.94856	4.24390	0.75369	2.76543	2.59441
Children	-1.22232	-0.95156	-0.79887	-0.66461	-1.26368
Marital	4.58493	3.79554	-2.74941	4.41917	2.71361

With the inclusion of more than one variable in the equation, I was able to generate a report of each step in the equation using the STEPDISC software. These reports are valuable in that they show changes in *F* values and *p* values as variables are included in the equation. In simpler terms, after mother's education was included in the equation, the predicative strength of each of the remaining five independent variables was recalculated by determining the new *F, R², p*, and tolerance levels, determining the ability and order of entrance into the equation. In step 1 of the analysis, mother's education has the largest *F* value at 6.29, and the largest R^2 at .2093, and the strongest *p* value at .0002, clearly showing that the greatest amount of variability was accounted for by mother's education. Therefore, it was included first in the equation (see Table 17).

In step 2, participants' marital status is clearly the strongest predictor with an *F* value of 3.35, an R^2 of .1249, and a *p* value of 0.0130. The reliability of the data is verified by a tolerance level of .9572. Therefore, marital status was entered into the equation (see Table18).

Table 17
Step 1. Entrance of Mother's Education

The STEPDISC Procedure
Stepwise Selection: Step 1

Statistics for Entry, *df* = 4, 95

Variable	R-Square	*F* Value	Pr > F	Tolerance
Ethnicity	0.0612	1.55	0.1947	1.0000
Age	0.0779	2.01	0.0999	1.0000
Income	0.0257	0.63	0.6444	1.0000
Education	0.2093	6.29	0.0002	1.0000
Children	0.0168	0.41	0.8041	1.0000
Marital	0.1478	4.12	0.0040	1.0000

Variable Education will be entered.

Table 18
Step 2. Entrance of Marital Status

The STEPDISC Procedure
Stepwise Selection: Step 2

Statistics for Entry, *df* = 4, 94

Variable	R-Square	Partial *F*	Pr > F	Tolerance
Ethnicity	0.0801	2.05	0.0941	0.9511
Age	0.0577	1.44	0.2274	0.9718
Income	0.0396	0.97	0.4286	0.9242
Children	0.0168	0.40	0.8069	0.9758
Marital	0.1249	3.35	0.0130	0.9572

Variable Marital will be entered.

In step 3, the recalculations show that participants' ethnicity has now surpassed age in predicative power with an *F* value of 3.0, an R^2 of .1143, and a *p* value of 0.0223. Participant's ethnicity, therefore, is included into the equation (see Table 19).

In the final analysis, the three included functions reported *p* values (used to determine inclusion) of education (.0002), marital status (.0029), and race (.0223). The three functions excluded reported *p* values of age (.2302), household income (.5594), and number of children (.8363) as reported in Table 20. Tolerance levels throughout the steps showed little risk of multicollinearity between variables.

Direct Analysis of Attainment Expectations

To examine the predicative power of mother's education for attainment expectations, I performed a direct discriminant analysis using the three variables suggested by the stepwise analysis: mother's education, marital status, and ethnicity. The resulting total error count was .4026 or 40.26%. Therefore, the degree of correct classifications was approximately 60%. Although this still represents a high

Table 19
Step 3. Entrance of Mother's Ethnicity

The STEPDISC Procedure
Stepwise Selection: Step 3

Statistics for Entry, *df* = 4, 93

Variable	R-Square	Partial *F*	Pr > F	Tolerance
Ethnicity	0.1143	3.00	0.0223	0.8948
Age	0.0497	1.22	0.3095	0.9387
Income	0.0545	1.34	0.2605	0.8957
Children	0.0133	0.31	0.8678	0.9305

Variable Ethnicity will be entered.

Table 20
Report of Stepwise Discriminant Analysis: Values for Included and Excluded Variables

Included Variables

Variable	R-Square	Partial *F*	Pr > F
Education	0.2080	6.11	0.0002
Marital	0.1575	4.35	0.0029
Ethnicity	0.1143	3.00	0.0223

Excluded Variables

Variable	R-Square	Partial *F*	Pr > F
Age	0.0586	1.43	0.2302
Income	0.0316	0.75	0.5594
Children	0.0154	0.36	0.8363

amount of error, the probability of correct classification into any group by mere chance was 20%. In other words, classification based on these three predictor variables was three times the level that could be obtained by chance.

Even though the average correct prediction was approximately 60%, there was a significant amount of variance in the analysis' ability to make correct predictions between groups. For example, 100% of those who expected their child to obtain a high school degree were correctly classified compared to a 20% prior probability of correct classification. The analysis correctly classified 62.5% who expected their children to go to 2 or more years of college compared to a 20% prior probability of correct classification. The analysis correctly classified 46.94% who expected their children to obtain a bachelor's degree compared to a 20.0% prior probability of correct classification. The analysis correctly predicted 14.29% who expected their children to receive a graduate degree and 75.00% who were undecided both compared to 20.00% prior probability of correct classification (see Table 21).

Table 21
Direct Discriminant Analysis for Attainment Expectation including Six Predictor Variables

Actual Classification	Number and Percent of Predicted Classifications					
	HS	SC	BD	AD	UD	Total
HS	3	0	0	0	0	3
%	100.00	00.00	00.00	0.00	0.00	100.00
SC	1	10	1	2	2	16
%	6.25	62.50	6.25	12.50	12.50	100.00
BA	2	11	23	7	6	49
%	4.08	22.45	46.94	14.29	12.24	100.00
AD	0	8	10	4	6	28
%	0.00	28.57	35.71	14.29	21.43	100.00
UD	0	1	0	0	3	4
%	0.00	25.00	0.00	0.00	75.00	100.00
Predicted vs. Actual	6 vs. 3	10 vs. 16	23 vs. 49	4 vs. 28	3 vs. 4	
Prior Probability	20	20	20	20	20	
%	20.00%	20.00%	20.00%	20.00%	20.00%	

Total Error Count for Expected Attainment

Expected Total Attainment	AD	BA	HS	SC	UD
Rate of Error .4026	0.8571	0.5306	0.0000	0.3750	0.2500
Prior Prob %	0.2000	0.2000	0.2000	0.2000	0.2000

*(HS=high school or less; SC=some college, 2+ years without a BA degree; BA=bachelor's degree; AD=graduate or professional degree; UD=Undecided)

To see if the error count could be further decreased, I also performed a direct discriminant analysis that forced all six independent variables into the model along with the five dependent variables or expectations. The resulting output was a total error count of .3870; or 38.70% of participants were classified incorrectly (see Table 22). This error count was only slightly better than what was obtained using the three variables identified by the stepwise procedure.

In addition to slightly lowering the total error count, the inclusion of the additional three variables significantly changed the percentage of error for two groups. The error count for advanced degrees (AD) decreased from .8571 to .5714. The error count for undecided (UD) increased from .2500 to .5000. The error count for predicting an expectation of a high school degree or less, however, remained unchanged at 0.00.

Summary

The results from the stepwise analysis for grade expectations identified mother's education as the strongest predictor. The direct discriminant analysis output (error count of .7273), however, revealed that mother's education alone could not accurately predict her grade expectations. The direct discriminant analysis output for all six predictor variables (.4275) showed that the combined six variables served as a significantly better predictor than mother's education or random assignment (probability error count of .6667) .

The results of the stepwise analysis for attainment expectations also showed that mother's education was the greatest predictor of her attainment expectations. The linear discriminant functions reported that mother's marital status and family income were the next strongest predictors as individual variables. The combination of variables suggested

Table 22
Direct Discriminant Analysis for Attainment Expectation including Six Predictor Variables

Actual Classification	Number and Percent of Predicted Classifications					
	HS	SC	BA	AD	UD	Total
HS	3	0	0	0	0	3
%	100.00	00.00	00.00	0.00	0.00	100.00
SC	1	11	1	1	2	16
%	6.25	68.75	6.25	6.25	12.50	100.00
BA	2	10	22	8	7	49
%	4.08	20.41	44.90	16.33	14.29	100.00
AD	0	7	7	12	2	28
%	0.00	25.00	25.00	42.86	7.14	100.00
UD	0	2	0	0	2	4
%	0.00	50.00	0.00	0.00	50.00	100.00
Predicted vs. Actual	6 vs. 3	30 vs. 16	30 vs. 49	21 vs. 28	13 vs. 4	
Prior Probability	20	20	20	20	20	
%	20.00%	20.00%	20.00%	20.00%	20.00%	

Total Error Count for Expected Attainment 6 Variables

Expected Total Attainment	AD	BA	HS	SC	UD
Rate of Error 0.3870	0.5714	0.5510	0.0000	0.3125	0.5000
Prior Prob %	0.2000	0.2000	0.2000	0.2000	0.2000

*(HS=high school or less; SC=some college, 2+ years without a BA degree; BA=bachelor's degree; AD=graduate or professional degree; UD=Undecided)

for direct analysis was mother's education, marital status, and mother's ethnicity. The direct discriminant analysis output for these combined variables was .4026, significantly better than could be obtained by chance (probability error count of .8000). The direct discriminant analysis for all six variables combined was .3870. These results verified the results of the frequency distribution tables and the chi-square tests for significance.

Research Question III

Do all parents' have set educational expectations prior to receiving feedback regarding the child's abilities and performance?

To research this question, participants were given "undecided" as one of their options for grade and achievement expectations. Nine participants responded that they were undecided on their expectations for their children's grades. Only 4 participants responded that they were undecided on their expectations for their children's scholastic attainment. The short answer to this question, therefore, is no. Not all parents have set expectations prior to the birth of their child. However, the great majority do, particularly in regards to educational attainment. To further explore this question and those participants who did not have set expectations, I use this section to compare and contrast the participants who answered undecided with the rest of the sample pool. I first examine those who answered undecided on grade expectations and then those who answered undecided on attainment expectations.

Undecided Grade Expectations

A majority of participants (91%) were able to specify what type of grade expectations they had for their unborn child. Most participants (69%) expected mostly A

grades, 21% expected mostly B grades, 1% expected mostly C grades, and 9% were undecided on their expectations. These data suggest that most, but not all, parents have firmly set grade expectations for their children even prior to their birth.

Are there other differences between participants who were undecided in their grade expectations and the total sample population? Yes. Participants who had undecided grade expectations were typically older at 28.2 years old compared to 26.3 years old for the total population. Fewer participants who were undecided worked for pay at 56% compared to 62% of the total population. More undecided participants had only a high school education at 33% compared to 15% of the total population. Undecided participants had lower attainment expectations with 11% expecting high school diplomas compared to 3% of the total population. Participants who were undecided on their grades expectations were also more likely to be undecided on their attainment expectations (see Table 23).

Undecided Attainment Expectations

Even fewer participants (4%) reported to have undecided attainment expectations. Three percent of participants had expectations for a high school diploma, 16% for at least some college, 49% for a bachelor degree, and 28% for an advanced or professional degree. These data suggest that the great majority of parents have set attainment expectations for their children even prior to their birth.

Are there other differences between participants who were undecided in their attainment expectations and the total sample population? Yes. Of the 4 undecided participants only 1 was White, 2 were Hispanic, and 1was Asian/Pacific Islander. The ethnicity of the sample pool was 68% White. The average age of the undecided participants was 25 years old, slightly younger than the 26.3 year average for the sample

Table 23
Participants with Undecided Grade Expectations Compared to Total Sample

Variable	Undecided Grades	Total Sample
Ethnicity	67% White, 33% Non-White	68% White, 32% Non-White
Average Age	28.2 years old	26.3 years old
Worked for Pay	56%	62%
Currently Enrolled	22%	19%
Participant's Education	33% high school 11% some college 11% associate degree 22% bachelor degree 22% advanced degree	15% high school 26% some college 18% associate degree 36% bachelor degree 3% advanced degree
Father's Education	22% high school 33% some college 22% bachelor degree 11% advanced degree	16% high school 25% some college 14% associate degree 29% bachelor degree 9% advanced degree
Attainment Expectation	11% high school 11% some college 44% bachelor degree 22% advanced degree 11% undecided	3% high school 16% some college 49% bachelor degree 28% advanced degree 4% undecided
Home Ownership	22% owned home 56% renting 22% other arrangement	32% owned home 53% renting 15% other arrangement

pool. One of the 4 (25%) undecided participants worked for pay in the last week, compared to 62% of the sample pool. Two undecided participants were enrolled in school compared to 19% of the sample pool. None of the undecided participants had attained a bachelor degree or beyond compared to 39% of the total sample. And all 4 of the undecided participants were renting their home. Due to the small number of participants who were undecided, these figures must be interpreted with great caution (see Table 24).

Table 24
Participants with Undecided Attainment Expectations Compared to Total Sample

Variable	Undecided Attainment	Total Sample
Ethnicity	25.% White, 75% Non-White	68% White, 32% Non-White
Average Age	25.0 years old	26.3 years old
Worked for Pay	25%	62%
Currently Enrolled	50%	19%
Participant's Education	50% High School 25% Some College 25% Associate degree	15% High School 26% Some College 18% Associate degree 36% Bachelor degree 3% Advanced degree
Father's Education	75% High School 25% Some College	16% High School 25% Some College 14% Associate degree 29% Bachelor degree 9% Advanced degree
Grade Expectation	25% Mostly A's 50% Mostly B's 25% Undecided	69% Mostly As 21% Mostly Bs 1% Mostly Cs 9% Undecided
Home Ownership	100% Renting	32% Owned Home 53% Renting 15% Other arrangement

Summary

Ninety-one percent of participants had set expectations for their children's grades prior to receiving any feedback regarding their children. Ninety-six percent of participants had set expectations for their children's attainment prior to receiving any feedback regarding their children. Those who were undecided regarding their children's grades had a mean age 2 years older than the total sample. They also had less personal education and lower attainment expectations. Those who were undecided on their children's attainment were slightly younger than the total pool. They also had less education, lower grade expectations, and were more likely to be renting their home. Because so few participants reported having undecided expectations, these results should be interpreted with caution.

CHAPTER 5

DISCUSSION

My purpose in this study was to examine anew the relations between mothers' background variables and their educational expectations for their children. Previous research suggested that certain background variables were significantly correlated with parents' educational expectations. However, nearly all existing research in this area involved parents who already knew much about their children's capabilities, aptitudes, abilities to do well in school, and their likelihood to attend college. My intent in this study was to corroborate or contradict previous findings by examining the relations between background variables and educational expectations without the confounding variable of feedback regarding a child's abilities. To accomplish this, participants in this study were limited to expectant mothers.

In addition to presenting the major findings in this chapter, I also highlight the similarities and differences between the findings of this study and previous studies, particularly the Parent and Family Involvement (PFI) study of 2003. I also discuss the implications of the findings as well as possible causes and applications. Finally, I conclude with study limitations and challenges and suggestions for future research.

Major Findings

Three major findings emerged from this study. First, prior to their children's birth, most mothers had similarly high educational expectations. Second, when prior student performance was eliminated, only mother's education demonstrated significant correlations with both types of educational expectations. Third, some combinations of variables were able to significantly increase correct expectation predictions.

The first major finding was that most mothers had similarly high educational expectations regardless of background variables. A majority of mothers expected their children to receive A grades in school and to go to college after high school. This homogeneity of expectations contributed to the small number of significant correlations found between the background variables and educational expectations.

The similarity of expectations in this sample and the small number of significant correlations somewhat contradicted the findings of the PFI study and other studies that included parents of school aged children. For example, 10% fewer participants in the PFI study expected their children to graduate from college and greater variance was found among expectations.

The second major finding of this study was that a mother's educational attainment was highly correlated with both grade and attainment expectations even prior to her child's birth. Increases in participants' education level always positively correlated with increases in their grade and educational expectations. All mothers who had attained some post-high-school education expected their children to do the same. Only 1 mother of the 36 who had obtained a bachelor's degree expected her child to obtain less than a bachelor degree.

Differences between mothers who had completed a high school education or less and those who had earned at least a bachelor's degree in college were quite dramatic. For example, 33.3% of mothers who had received a high school degree or less expected their child to receive mostly A grades compared to 83.3% of mothers who had received a bachelor's degree.

These large differences corroborate the correlations found in the PFI study and many other studies relating to a mother's education and educational expectations (Herrold & O'Donnell, 2008; Jeynes, 2007; Sandefur et al., 2006; Trusty & Pirtle, 1998). The correlation between a mother's education and her educational expectations appears to be significant whether or not she has received feedback regarding her child's academic abilities.

One particularly interesting finding regarding mother's education was the amount of variation in expectations within the 15 participants who had a high school degree or less. This group most frequently reported (33.3%) that they expected their child to receive an advanced degree beyond a bachelor's degree. This group also had 20% who expected their child to discontinue their education after high school graduation. The seemingly random distribution of these data revealed unexpected differences among mothers who have little or no college experience. A study focusing on the causes of the expectation differences within this particular group would be of great value.

As duly noted, mother's education was unquestionably the best predictor for grade expectations in this sample. However, knowing only the mother's education level was not enough to correctly predict her expectations. Even though mother's education

emerged as the most significantly correlated variable prior to child birth, it appears that no single variable was totally responsible for mothers' educational expectations.

The third major finding of this study relates to combinations of background variables and their ability to predict mothers' expectations. The combination of three predictor variables, mother's education, marital status, and ethnicity, would increase the correct classification of observations by nearly three times over chance alone. The addition of the other three predictor variables (mother's age, household income, and number of children), so that all six variables were included in the equation, only slightly improved (less than 2%) the classification rate over the first three variables.

Comparison with the PFI study of 2003

In addition to unique and important data previously unavailable, this study also provides data useful for comparison between mothers' initial expectations and their expectations after they have received feedback regarding their children. As outlined in the methodology section, this study closely aligns with portions of the Parent and Family Involvement study conducted in 2003 (see Vaden-Kiernan & McManus, 2005). These two studies examined expectations relative to four common variables: ethnicity, income, education, and marital status. The following is a comparison and discussion between the findings of these two studies. A description and comparison of participant characteristics is also included. Table 25, included in this section, depicts in greater detail the responses from both studies.

Participant Characteristics

Participants in the PFI sample were parents, typically mothers, who had children in the sixth through twelfth grades. Participants in this study (Eggett) were all expectant mothers. Sixty-four percent of the participants in the PFI sample were categorized as White, 16% as Black, 14% as Hispanic, 3% as Asian or Pacific Islander, and 3% as other. Sixty-eight percent of participants in this study were categorized as White, 20% as Hispanic, 6% as Bi-Racial, 3% as Asian or Pacific Islander, 2% as African American, and 1% as American Indian.

Seventy-two percent of participants in the PFI sample were married, compared to 79% of participants in this study. Twenty-four percent of participants in the PFI sample had an income of $25,000 or less, 26% between $25,001 and $49,999, 22% between $50,000 and $74,999, and 28% had an income of $75,000 or more. Thirty-three percent of participants in this study had an income of $25,000 or less, 39% between $25,001 and $49,999, 19% between $50,000 and $74,999, 5% had an income of $75,000 or more, and 4% did not report their income.

Thirty-six percent of participants in the PFI sample had a bachelor's degree or higher, 31% had some postsecondary education, and 34% had a high school education or less. Thirty-nine percent of participants in this study had a bachelor's degree or higher, 44% had some postsecondary education, 15% had a high school education or less, and 2% did not report their education.

Ethnicity

Sixty-six percent of White students in the PFI study had parents who expected them to complete a bachelor's degree or higher, compared to 64% of African American

and 64% of Hispanic students. Seventy-six percent of White students in this study had parents who expected them to receive a bachelor's degree or higher, compared to 78% of non-Whites (mostly Hispanics) in this study.

Two important points emerge in this comparison. First, regardless of ethnicity, the expectant mothers in this study had higher expectations than the parents of older children in the PFI study. Second, in both studies, the differences between White, Hispanic, and African American participants were very small and in some cases nonexistent. One noteworthy exception to this finding was presented in the PFI study which found that 80% of Asians expected their children to obtain a bachelor's degree or higher. However, the authors recommended caution in drawing conclusions due to the limited number of Asian participants in their sample. It is also important to mention that both studies failed to collect meaningful samples of some ethnicities, particularly Asians and Pacific Islanders.

Income

Eighty-three percent of participants in the PFI study with a household income greater than $75,000 expected their children to receive a bachelor's degree or higher compared to 51%, 56%, and 70% for students from families with incomes of $24,999 or less, $25,000 to $49,999, and $50,000 to $74,999, respectively.

Seventy-five percent of participants in this study whose income was $50,000 or more expected their children to obtain a bachelor's degree or higher, compared to 73% and 82% for students from families with incomes of $24,999 or less, and $25,000 to $49,000, respectively.

The comparison of these results suggests that income may not play a significant role in mothers' initial expectations, but may become more important as the parents and children age. This change is possibly due to the increasing reality of college expenses, such as tuition, housing, and materials.

Education

Eighty-eight percent of parents in the PFI study who had obtained a bachelor's degree or higher expected their students to finish college, compared to 62% of parents who had some postsecondary education, and 44% of parents who had a high school education or less. Similarly, 97% of expectant mothers in this study who had obtained a bachelor's degree or higher expected their students to finish college, compared to 70% of expectant mothers with some postsecondary education, and 47% of expectant mothers with a high school education or less.

The similarly high correlations found in both of these studies between participants' education and their expectations for their children strengthens the position of parents' education as the most important factor in their education expectations. Again, the expectant mothers in this sample had higher expectations than the PFI sample.

Marital Status

Sixty-nine percent of students from two-parent families in the PFI study had parents who expected them to earn a bachelor's degree or higher, compared to 58% of students from single-parent families. Eighty percent of expectant mothers who were married to the children's fathers in this study expected their children to earn a bachelor's degree or higher, compared to 69% of expectant mothers who were single.

Table 25.
Percentage distributions of participants' attainment expectations for PFI and Eggett studies by ethnicity, income, education, and marital status

Characteristic	High school or less (percent)		Some post-secondary education (percent)		Bachelor's Degree or higher (percent)	
	PFI	Eggett	PFI	Eggett	PFI	Eggett
Ethnicity						
White	8	4	26	18	66	76
Hispanic	11	--	25	--	64	--
African American	11	--	26	--	64	--
Asian/Pacific Islander	[a]4	--	16	--	80	--
[b]Non-White combined	--	0	--	13	--	78
Income						
$24,999 or less	17	3	32	18	51	73
$25,000 to $49,999	11	3	33	10	56	82
$50,000 to $74,999	5	0	25	26	70	74
[c]$75,000 or more	4	20	14	0	83	80
Education						
High school or less	18	20	38	20	44	47
Some post-secondary	7	0	31	26	62	70
Bachelor's degree or higher	2	0	10	3	88	97
Marital Status						
Married	8	0	23	18	69	80
Single	12	23	30	8	58	69

[a] Interpret data with caution. Standard error is more than 30% as large as estimate.
[b] Due to sample size limitations, Eggett study combined all non-White participants.
[c] The Eggett study only had 5 participants with an income of $75,000 or more.

In each study, 11% more married than single participants expected their children to earn a bachelor's degree or higher, fortifying the position that married parents have generally higher expectations. As discussed in Chapters 2 and 4, theorists suggest that this difference may be due to the greater amounts of time, income, and other resources often more readily available in two-parent homes.

Implications of Findings

The overall high expectations found in this study have several possible causes and implications. It may be that prior to their children's birth, parents want and expect their children to succeed at the highest academic levels. Then as children demonstrate their abilities in formal schooling, parents adapt their expectations to more closely align with their children's actual educational performance.

It may also be that over time, parents separate their aspirations (what they wish for their children) from their expectations (what they believe will actually happen). This possibility is suggested by Goldenberg et al. (2001) who found that parents' expectations in their sample changed over time, particularly as they received feedback regarding their children's educational abilities. They also concluded, however, that parents had expectations and aspirations that frequently differed. Unfortunately, Goldenberg et al. conducted their longitudinal study with children who were already in school, making it difficult to draw the fullest conclusions.

Another possibility is that some of the background variables that failed to show a significant correlation in this study do not substantially affect expectations until after the child is older and engaged in formal schooling. For example, parents' income may have little or no influence on their college expectations for their children prior to birth, but it

may become a significant factor in their expectations as the time for enrolling and paying for college approaches. Similar cases could be made for ethnicity, number of children, and marital status. In reality, a combination of causes is probably at play in determining expectation differences over time. Each of these possibilities strengthens the theory of "reverse causality."

Perhaps the most important implication from the comparison between this study and the PFI study is that parents' expectations can and do change. This idea carries forward into another important implication; if parents' educational expectations have been found to decrease in connection with feedback and experience, it is reasonable to assume that parents' expectations may also increase. Just as negative feedback seems to decrease expectations, positive feedback regarding their children and their children's potential could help parents to maintain or even increase their initial educational expectations for their children. This feedback could come in a number of ways, such as one-on-one contact between parents and teachers or group meetings such as back-to-school night.

Additional implications can be made from the consistently high correlation between mothers' education levels and their expectations. The findings in this study strengthen the position of Sandefur et al. (2006) and others who have theorized that mothers who have successfully navigated the higher educational system more readily recognize the value and benefits of educational attainment and feel more confident in their ability to assist their children in doing the same. Therefore, they hold high educational expectations for their children.

This theory presents many possibilities in terms of potential application. If experience in the educational arena facilitates mothers' high expectations, is it possible to somehow simulate or replicate that experience for mothers who have had limited exposure and experience in the higher education arena? One program currently being implemented at some universities serves as a possible model for providing such experiences for mothers. The program, designed to help students overcome the fear of going to college, arranges for precollege students to visit campus on one or more occasions. During these visits, students have the opportunity to familiarize themselves with the application process, campus life, and general campus surroundings.

Perhaps these types of visits or similar experiences would be equally valuable for the students' mothers. This familiarization with the campus and what is entailed in application and enrollment may ease some of the concerns of mothers who feel unprepared or unqualified to assist their children due to their lack of personal experience. This could be particularly important for the numerous students who rely on their parents to assist them in the application and enrollment process. Furthermore, it would be important to provide these experiences early on in the child's life when parents' expectations appear to be generally high.

Differences in expectations among mothers of similar backgrounds also imply that some mothers place a higher value on education than do others. Furthermore, it appears that mothers who place a higher value on education also hold higher educational expectations for their children. What, then, can be done to increase the value parents place on education? One promising method is to help parents see the benefits of education. For example, if parents are generally concerned about helping their children to

succeed financially, it may be beneficial to provide comparison data showing how increases in education correlate with increases in average earned-income. Parents might also respond to information regarding the numerous nonfinancial benefits of education. As this study suggests, it is important that parents be instructed early in these matters. Perhaps material designed to help parents have and maintain high educational expectations could be included in the discharge packets new mothers receive at the hospital or in the material parents receive from their child's pediatrician.

Conclusion

In conclusion, this study again demonstrated the complexity of mothers' expectations. For this study, I selected what previous research suggested as the most predictive variables for mothers' expectations. In the end, even with sophisticated statistical tools and multiple combinations of variables, the best model the data could produce only predicted participants' expectations 6 out of every 10 participants correctly.

Somewhat contrary to the existing research, most mothers had similarly high expectations prior to their children's birth regardless of background characteristics. However, the significant correlation between mothers' education and their expectations was similar to what has been found in previous studies with mothers of older children. Furthermore, the differences in expectations that were found could not be totally accounted for by the variables investigated in this study. Evidently there are additional variables not used in this study that contribute to mothers' expectations prior to their children's birth.

Perhaps the greatest strength of this study is that it offers a unique examination of mothers' educational expectations completely separate from previous feedback regarding

the child. Although the sample was of limited size and somewhat homogenous in background characteristics, this study provides an important look at mothers' initial expectations for their children. This study also provides an important new direction for future studies in the area of mothers' educational expectations.

Limitations and Challenges

At least two major limitations are found in this study: (a) small sample size and (b) sample homogeneity. These limitations are particularly evident in the categories of ethnicity, income, and number of children. Limitations due to a lack of diversity among participants was somewhat expected because of the homogenous demographics of the sample area: a small western city in a rather homogenous community. Ideally, the sample should have included at least 10 participants from four or more ethnicities. Even though the combining of ethnicities into two main categories still produced findings sufficient to answer the research question, the validity of the results would have been significantly increased had they been demonstrated among a number of ethnic groups. Previous research suggests some non-White ethnicities have typically higher expectations than the White population while others have typically lower expectation. This could make the combining of all non-White ethnicities into one category a weakness in this study.

In regards to income, it was difficult to secure participants whose family income surpassed $75,000. This may have been due to the relative youthfulness of participants (in their child-bearing years) who have not yet reached their full earning potential. Nevertheless, trends that seemed to be evident within this higher income group could not be verified due to the small number of participants in this category. Similar challenges were found with the few participants who reported to have four or more children.

These challenges tended to limit the generalizability of the findings. In other words, the lack of greater diversity and the small sample size increased the difficulty of transferring these findings to other more diverse populations. As was evident in this sample, even when variables are not directly correlated to educational expectations, their interaction with variables that are correlated can be a significant determinant in what mothers' expect of their soon to be born children. This fact becomes particularly important when looking at populations where combinations of variables have substantial variance due to diversity.

Suggestions for Future Research

There is still much research that can and should be done in regards to parents' expectations, particularly in the form of longitudinal studies. Valuable information could be obtained from longitudinal studies that examine changes in parents' expectations from prebirth through the child's formal educational years. This would be particularly helpful in understanding how ethnicity and interrelated variables play a role in expectations over time. It would also increase our understanding of how changes in income affect expectations. It may give further insight as well into expectation changes that could occur with age and increased life experiences.

The educational expectations field would also benefit from the inclusion of many more qualitative studies. Causal studies of this nature could help us understand why one mother who attended no college expects her child to do the same, while another mother who attended no college expects her child to obtain an advanced degree. This type of information could prove valuable in assisting parents' to raise their educational expectations for their children.

Finally, the data from this study suggest that variables not normally studied are somehow affecting mothers' expectations. Both quantitative and qualitative studies designed to uncover these variables would be of great benefit.

APPENDIX

EXPECTANT MOTHERS QUESTIONAIRE

EXPECTANT MOTHERS QUESTIONAIRE

Ethnicity and Country of Origin

1. Your **child** will be…(circle)
    a. White
    b. Black
    c. American Indian or Alaska Native
    d. Asian or Pacific Islander
    e. Hispanic/Latino/Mexican/Spanish/Puerto Rican
    f. Some other race?(please indicate)_____
    g. More than one race/biracial? (please indicate)_____

2. In what state or territory and country were you (**mother**) born?
   State/territory_____ Country_____

3. Are you (**mother**)… (circle)
    a. White
    b. Black
    c. American Indian or Alaska Native
    d. Asian or Pacific Islander
    e. Hispanic/Latin/Mexican/Spanish/Puerto Rican
    f. Some other race? (please indicate)_____
    g. More than one race/biracial? (please indicate)_____

4. In what state/territory and country was the **father** born?
   State/territory_____ Country_____

5. Is the **father**…(circle)
    a. White
    b. Black
    c. American Indian or Alaska Native
    d. Asian or Pacific Islander
    e. Hispanic/Latin/Mexican/Spanish/Puerto Rican
    f. Some other race? (please indicate)_____
    g. More than one race/biracial? (please indicate)_____

Age

1. In what month and year do you anticipate your **child** will be born?

    Month_____ Year_____

2. In what month and year were you (**mother**) born?

    Month_____ Year _____

3. In what month and year was the **father** born?

    Month_____ Year_____

Employment and Income

Mother Characteristics

1. During the past week, did you (**mother**) work at a job for pay or income? (circle)
    a. Yes
    b. No
    c. Retired
    d. Disable/unable to Work
    e. On leave or vacation from a job during the past week

2. About how many total hours per week do you (**mother**) usually work for pay or income, counting all jobs?

    Number of hours_____

3. Are you (**mother**) attending or enrolled in a school, college, university, or adult learning center, or receiving vocational education or job training [other than at your regular job?] (circle)

   YES

   NO

Father Characteristics

4. During the past week, did the **father** work at a job for pay or income? (circle)
   a. Yes
   b. No
   c. Retired
   d. Disable/unable to Work
   e. On leave or vacation from a job during the past week
   f. Do not know
5. About how many total hours per week does the **father** usually work for pay or income, counting all jobs? (if the information is not known, please write "unknown")

   Number of hours_____

6. Is the **father** attending or enrolled in a school, college, university, or adult learning center, or receiving vocational education or job training [other than at your regular job? (circle)

   YES NO DO NOT KNOW

7. In studies like this, households are sometimes grouped according to income. What was the total income of all persons in your household over the past year, including salaries or other earnings, interest, retirement, and so on for all household members? Was it… (circle)

   a. $24,999 or less
   b. $25,000 to $49,999
   c. $50,000 to $74,999
   d. $75,000 or more

Education

1. What is the highest grade or year of school that you (**mother**) completed? (circle)

    a. Less than high school diploma
    b. High school diploma/equivalent
    c. Some Vocational/Tech school
    d. Vocational/Tech program diploma
    e. Some college but no degree
    f. Associate's degree
    g. Bachelor's degree
    h. Master's degree
    i. Doctorate degree
    j. Professional Degree Beyond Bachelors Degree (MD; DDS; JD)
    k. DO NOT KNOW

2. What is the highest grade or year of school that the **father** completed? (circle)

    a. Less than high school diploma
    b. High school diploma/equivalent
    c. Some Vocational/Tech school
    d. Vocational/Tech program diploma
    e. Some college but no degree
    f. Associate's degree
    g. Bachelor's degree
    h. Master's degree
    i. Doctorate degree
    j. Professional Degree (MD; DDS;JD)
    k. DO NOT KNOW

3. What is the highest grade completed by your child's **Maternal Grandmother** (the mother of the baby's mother)? (circle)

    a. Less than high school diploma
    b. High school diploma/equivalent
    c. Some Vocational/Tech school
    d. Vocational/Tech program diploma
    e. Some college but no degree
    f. Associate's degree
    g. Bachelor's degree
    h. Master's degree
    i. Doctorate degree
    j. Professional Degree (MD;DDS;JD)
    k. DO NOT KNOW

4. What is the highest grade completed by your child's **Maternal Grandfather** (the father of the baby's mother)? (circle)
    a. less than high school diploma
    b. High school diploma/equivalent
    c. Some Vocational/Tech school
    d. Vocational/Tech program diploma
    e. Some college but no degree
    f. Associate's degree
    g. Bachelor's degree
    h. Master's degree
    i. Doctorate degree
    j. Professional Degree (MD;DDS;JD)
    k. DO NOT KNOW

5. What is the highest grade completed by your child's **Paternal Grandmother** (the mother of the baby's father)? (circle)
    a. Less than high school diploma
    b. High school diploma/equivalent
    c. Some Vocational/Tech school
    d. Vocational/Tech program diploma
    e. Some college but no degree
    f. Associate's degree
    g. Bachelor's degree
    h. Master's degree
    i. Doctorate degree
    j. Professional Degree (MD;DDS;JD)
    k. DO NOT KNOW

6. What is the highest grade completed by your child's **Paternal Grandfather** (the father of the baby's father)? (circle)
    a. Less than high school diploma
    b. High school diploma/equivalent
    c. Some Vocational/Tech school
    d. Vocational/Tech program diploma
    e. Some college but no degree
    f. Associate's degree
    g. Bachelor's degree
    h. Master's degree
    i. Doctorate degree
    j. Professional Degree (MD;DDS;JD)
    k. DO NOT KNOW

7. What are your plans for your child's formal education: (circle one)
    a. Traditional Public School
    b. Public Charter School

c. Private Non-religious School
d. Private Religious School
e. Home School
f. Undecided

8. Overall, what grades do you expect your child to receive throughout their formal schooling? (circle)

    a. Mostly A's (90%-100%)
    b. Mostly B's (80%-89%)
    c. Mostly C's (70%-79%)
    d. Mostly D's (60%-69%)
    e. I do not have expectations for my child's grades at this point

9. How far do you expect your child to go in his/her education? Would you say you expect him or her . . . (circle)

    a. To receive less than a high school diploma
    b. To graduate from high school
    c. To attend a vocational or technical school after high school
    d. To attend two or more years of college
    e. To finish a four- or five-year college degree
    f. To earn a graduate degree or professional degree beyond a bachelor's?
    g. Undecided.

10. Do you or does anyone in your family plan to help your child pay for his or her education after high school? (circle)

    a. Yes
    b. No
    c. Haven't thought about it yet

Family Composition

1. If this is not your first child, how many children do you have?

    Sons _____(excluding this child) Daughters _____(excluding this child)

2. If you have other children, what are their ages? (Please list their ages youngest to oldest, e.g. 3, 7, 12, etc.) _____

3. If you have school-aged children, what types of grades do you they receive? (circle)

   a) Mostly A's
   b) Mostly B's
   c) Mostly C's
   d) Mostly D's
   e) Mostly F's

4. Are your school aged children meeting your educational expectations for them? (circle)

   Yes No I have no specific expectations

5. What is the relationship between the father and mother of this child? (circle)

   a. Married living together
   b. Married but separated
   c. Divorced
   d. Engaged
   e. Cohabitation
   f. Heterosexual Partners

Household Characteristics

1. Please circle all of the people who will live in the household with your child. If there is more than one person in a category, such as sisters, please include the total number living in the household.
    a. Mother
    b. Father
    c. Sister (s)_____
    d. Brother (s)_____
    e. Maternal Grandmother
    f. Maternal Grandfather
    g. Paternal Grandmother
    h. Paternal Grandfather
    i. Cousin (s)_____
    j. Aunt(s)_____
    k. Uncle (s)_____
    l. Others: Please specify _____
2. Do you... (circle)
    a. Own your home?
    b. Rent your home?
    c. Have some other arrangement?
3. Do you have a computer or laptop at home? (circle)

    Yes

    No

4. Do you have access to the internet at home? (circle)

   Yes

   No

5. In the past 3 years, how many times has your family moved from one home or household to another?

   _____

6. In the past 12 months has your family received benefits from any of the following programs; (circle)
   a. TANF(temporary assistance for needy families), AFDC (aid to families with dependent children), or your state welfare program?
   b. Women, Infants, and Children, or WIC?
   c. Food Stamps?
   d. Medicaid?
   e. Children Health Insurance Program or State Chip Program?

This is the end of the questionnaire. Thank you very much for participating.

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